actidata vTanis
User and Service Guide

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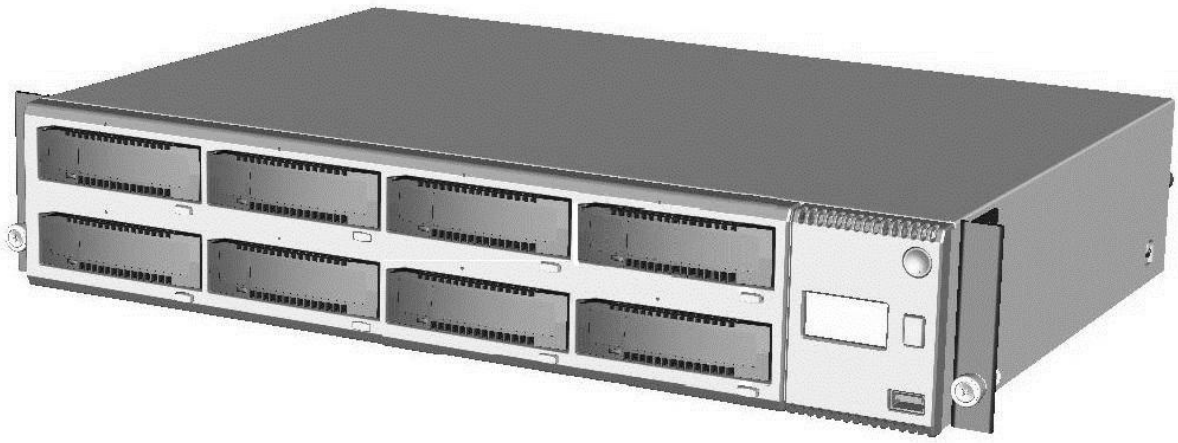
actidata Product Number:	**950 488 002-xx**
actidata Document Number:	**userman 302708 Revision 12**

Please visit our web site for additional information and tools.



Introduction

This document provides information about installing, operating, troubleshooting, and servicing a vTanis product. This document is intended for system administrators and users who need information on the vTanis product.

Product warranty caution

The warranty for the vTanis shall not apply to failures of any unit when:

- The vTanis is repaired or modified by anyone other than the manufactures personnel or approved agent.
- The vTanis is physically abused or used in a manner that is inconsistent with the operating instructions or product specification defined by the manufacturer.
- The vTanis fails because of accident, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, modification, or service by anyone other than the factory service center or its approved agent.
- The vTanis is repaired by anyone, including an approved agent, in a manner that is contrary to the maintenance or installation instructions supplied by the manufacturer.
- The manufacturer's serial number tag is removed.
- The vTanis is damaged because of improper packaging upon return.

In case of unauthorized repairs or modifications, your warranty becomes immediately void.

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Preface

About this manual

This manual provides information regarding the quick installation and hardware features of the *vTanis system*. This document also describes how to use the storage management software. Information contained in the manual has been reviewed for accuracy, but not for product warranty because of the various environment/OS/settings. Information and specifications will be changed without further notice.

This manual uses section numbering for every topics being discussed for easy and convenient way of finding information in accordance with the user's needs. The following icons are being used for some details and information to be considered in going through with this manual:

Notes: These are notes that contain useful information and tips that the user must give attention to in going through with the subsystem operation.

Important: These are the important information that the user must remember.

Warning: These are the warnings that the user must follow to avoid unnecessary errors and bodily injury during hardware and software operation of the subsystem.

Caution: These are the cautions that user must be aware to prevent damage to the equipment and its components.

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Changes

The material in this document is for information only and is subject to change without notice.

NOTE: Some screen shots may differ from actual vTanis model.

Manual conventions

High voltage

Risk of electric shock

Do not remove top cover. No user-serviceable parts are inside.

Refer servicing to qualified service personnel.

Weight of vTanis = Risk of damage to devices

When placing a unit into or removing the unit from a rack:

Extend the rack's leveling jacks to the floor.

Ensure that the full weight of the rack rests on the leveling jacks.

Install stabilizing feet on the rack.

Static sensitive = Risk of damage to devices

A discharge of static electricity damages static-sensitive devices or micro circuitry.

Proper packaging and grounding techniques are necessary precautions to prevent damage.

Ventilation – Place the product so that its location does not interfere with proper ventilation.

Heat – Place the product so that its location is away from external heat sources.

Power sources – Connect the product to a power source only of the type directed in the operating instructions or as marked on the product.

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Power cord protection – Place the AC line cord so that it is not possible to be walked on or pinched by items placed upon or against it.

Object and liquid entry – Insure that objects do not fall and liquids are not spilled into the product's enclosure

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Product overview

Introduction to the vTanis

Overview and applications

The vTanis is a multi-cartridge data storage device designed to support up to 8 RDX® cartridges. It may be utilized as a table top unit or rack mounted in a 2U high space with the included rack mounting ears. The vTanis connects to the user's computer network via one or two (1 Gb/sec or 100 Mbit/sec) network ports using iSCSI protocol. The vTanis unit is capable of operating in one of three administrator selected software protocol modes designed to address a variety of operating environments. Future software updates will allow the unit to be partitioned into separate logical storage units facilitating the capability to simultaneously operate as two different logical units (which can operate in different software protocol modes) while connected to different host systems/applications.

The vTanis unit features a local display panel (OCP) to display status and error information as well as a web based remote management interface (RMI) for remote monitoring. The RMI is also used by the system administrator to configure the unit for operation in their specific environment (initial set up) as well as provide the ability to remotely monitor and control unit operations/status.

The vTanis is compatible with most operating systems and environments that support iSCSI network protocol. However, the vTanis requires either direct support from the operating system or a compatible backup application to take full advantage of its many features.

vTanis product features

- Compatible with all capacities of RDX® data cartridges
- Provides up to 8 TB of native data storage capacity using standard RDX® data cartridges
- Unit can be used as a table top or rack mounted with included rack mounting ears
- Supports up to 216 GB per hour data transfer rate (Future releases will enhance transfer rate)

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- The vTanis displays cartridge status via the front panel display (OCP) with simple icons and provides more detailed information via the web based remote management interface (RMI).
- Front panel accessible USB 2.0 interface supports serviceability features and customized functions (firmware upgrades, diagnostic log collection, configuration backup, etc.)
- Future software releases will include supporting SNMP and SMI S management tools.

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RDX® cartridge features

- Forward and backwards compatible with all RDX® docks
- High speed transfer rate for fast backups
    - Superior vibration control insures optimum data transfer speed
- High level of data reliability
    - Error rate determined by HDD model in cartridge
    - Ruggedized cartridge to protect from data loss due to normal user handling of cartridge
    - Cartridge materials engineered to protect from data loss due to ESD
- Cartridge includes a fault indicator at the front of the cartridge to inform users when the cartridge is faulty.
- Cartridge includes a write protect slider to disable the write function.
- Cartridge includes a write protect switch to protect the cartridge from accidental overwrite of user data.
- Cartridge includes venting to enable cooling of the HDD.
- Cartridge includes gripping features for automation.
- Cartridge provides a rear opening for use with a latch to control media removal.
- Cartridge profile is unsymmetrical (keyed) to aid incorrect insertion.

Operation modes

The vTanis is capable of being configured during installation by the administrator to present up to eight
RDX® cartridges to the host system (via the iSCSI Initiator) as one of three different configurations of RDX® based storage devices. Depending upon the intended application and data management/backup application in use the correct mode needs to be selected to support unit operation. Please see the online vTanis software-compatibility matrix for additional information or contact your reseller. Below is a brief description of each operating mode.

Setting of the modes is covered in chapter Setting the vTanis operation mode, Page 47.

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Mode 1- vTanis tape library (default setting):

The unit appears to the host application as an 8 slot library (autoloader, media changer) containing one generic LTO tape drive. The application controls which cartridge is “inserted” in the one available “tape drive”. This mode requires the use of a data management/ backup applications, which supports a library (media changer) containing one tape drive.

Note that the vTanis unit is emulating the LTO tape format to the host application including the actual file format recorded on the RDX® cartridge. RDX® cartridges which are recorded in this mode are not write/read interchangeable with standard RDX® docks.

Use of this mode requires the administrator to pre-format the standard RDX® media to the tape format mode. The vTanis unit identifies the current cartridge format via the OCP and RMI interfaces.

Mode 2- vTanis JBOD:

The vTanis unit appears to the host operating system as 8 individual RDX® cartridge drives, each with their own drive letter.

Note that drive letters will only appear if an RDX® cartridge is inserted in an actual vTanis slot. Removal of media via cartridge eject will cause the drive letter to disappear. Reinsertion of media will cause the drive letter to reappear.

This mode may be used with windows operating systems for standard disk operations or with data management/backup application designed to operate with individual RDX® storage units in a grouped configuration.

Mode 3- vTanis disk library:

The unit appears to the host application as an 8 slot library (autoloader, media changer) containing one
RDX® cartridge drive. The application controls which cartridge is “inserted” in the one available drive. This mode requires the use of a data management/backup applications which supports a library (media changer) containing an RDX® drive.

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For maximal supported operation modes, see **Table .**

IQN iSCSI ID	Element type	Manufacturer name	Model Name	# of data transfer elements	# of storage elements	# of export elements	# of move elements
Mode 1	**Removable tape library**						
	SMC	actidata	vTanis T	1	8	1	1
	SSC	actidata	LTO				
Mode 2	**Individual RDX® disk**						
	SBD	actidata	RDX	NA	NA	NA	NA
	SBD	actidata	RDX				
	SBD	actidata	RDX				
	SBD	actidata	RDX				
	SBD	actidata	RDX				
	SBD	actidata	RDX				
	SBD	actidata	RDX				
	SBD	actidata	RDX				
Mode 3	**Removable disk library**						
	SMC	actidata	vTanis D	1	8	1	1
	SBD	actidata	RDX				

Table 1 Operation modes

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Front panel

The front panel of the vTanis is constructed of durable plastic and is designed to provide both visual appeal and protection from entry of dust/dirt. The eight spring-loaded cartridge bay doors prevent entry of dust when no cartridge is inserted, protect the unit from ESD, and control the cooling airflow through the device. The bezel surface may be cleaned with a water dampened lint free cloth.

Front panel layout

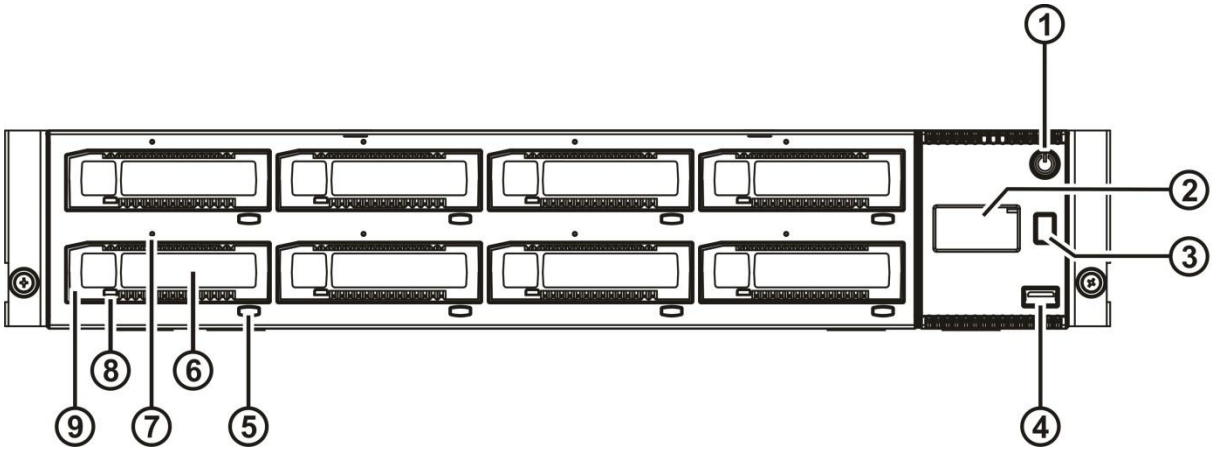

Figure 1 Front panel

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Number	Description
1	**AC power button** - Soft power switch with LED button indication, green power on, amber standby (2 colors) and power icon graphic.
2	**Operator control panel (OCP)** - 64x128 graphics display with RGB back light.
3	**OCP navigation button** - display mode selector switch - used to play/pause information on the operator display. Also used to locally acknowledge/clear error messages.
4	**USB 2.0 service port** - used for special maintenance and configuration functions.
5	**Cartridge eject button** (8 places) - soft eject button with LED through button indication (2 colors) - used to eject individual RDX® cartridges (when allowed by application).
6	**Cartridge identification label** (on RDX® media)- May be used to identify individual cartridges
7	**Emergency eject port** (8 places) - used to manually eject individual cartridges when unit power is off or in error conditions.
8	**Cartridge indicator** - RDX® cartridge fault indication LED.
9	**RDX® cartridge slot** (8 places) - RDX® dock location that accepts any type of RDX® standard media.

Table 2 Front panel

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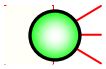
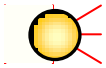
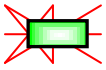
LED behavior

1. Power button

LED state		Status	Description
	Off	No power	No AC Power is present at the vTanis rear connector.
	Blinking green	Unit staring	Unit is in the process of becoming ready for operation.
	Steady green	Power on	Unit is ready for operation.
	Blinking amber	Unit shutting down	Unit is in the process of shutting down.
	Steady amber	Standby	Unit is in standby, AC power is present.

2. Cartridge eject button

LED state		Status	Description
	Off	No power	No cartridge inserted
	Steady green	Ready	Cartridge is inserted and the RDX® is operating properly.
	Blinking green	Ejecting	Unit is ejecting the cartridge.
	Steady amber	Fault	Unit has detected a fault condition.

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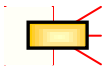
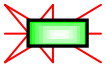
	Blinking amber	Prevent	Prevent media removal set, host is accessing the cartridge.

3. Cartridge indicator

LED state		Status	Description
	Off	Not ready	Cartridge is not inserted properly or power is off.
	Steady green	Ready	Cartridge is ready.
	Blinking green	Activity	Reading, writing or seeking activity occurring
	Steady amber	Fault	Cartridge has a fault condition.

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Rear panel

The rear panel of the vTanis provides access to the power connector, Ethernet ports, power supply and cooling fan.

Rear panel layout

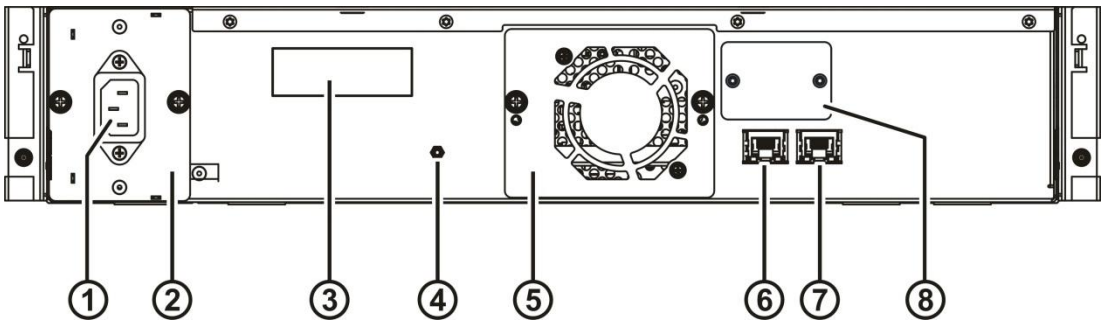

Figure 2 Rear panel

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Number	Description
1	**IEC Power connector (AC Power connection)**
2	**Power supply CRU** for replacement see chapter **CRU replacement, Power supply, Page 100** of manual)
3	**Product identification label**
4	**Hard reset port** (reset system defaults, for more information see chapter **Save/Restore configuration, Page 68** of manual)
5	**Cooling Fan CRU** (for replacement see chapter **CRU replacement, Cooling fan, Page 102** of manual)
6	**GigE iSCSI port 2**
7	**GigE iSCSI port 1**
8	**Removable back plate (for future options)**

Table 3 Rear panel

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Ethernet port LED behavior

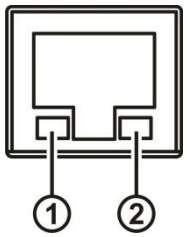

Figure 3 Ethernet port

Number	Description
1	**Link/Activity LED:** Blinking – indicates a link is established. Off – indicates no link is established
2	**Speed LED:** Amber on – indicates a Gigabit connection (1000 Mbps). Green on – indicates a 100-Mbps connection. Off – indicates a 10-Mbps connection.

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Product installation

General installation considerations

This chapter provides instructions for installing the vTanis.

Adhere strictly the following steps to install the vTanis product:

Selecting a location

Select a location that meets the following criteria:

Criteria	Definition
Mounting orientation	Horizontal only-either sitting on a table top or mounted in a 19" equipment rack via the included rack mount ears. The vTanis weighs 15.7 lbs (7.1 kg) when fully populated with cartridges and must be placed on or mounted in a system capable of supporting this weight
Rack requirements	Standard EIA rack pitch-2U high space
Room temperature Operating Non-operating	 +10° - +40° C, gradient 10°C/hour - 30° - +60° C, gradient 20°C/hour
Power source	100-240 VAC input voltage 50-60 Hz line frequency 1.2-0.6 A Locate the vTanis within 6 ft. of an AC outlet. The AC power cord is the vTanis main AC disconnect device and must be

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	easily accessible at all times.
Air quality	Place the vTanis in an area with minimal sources of particulate generation-excessive dust and debris can damage the system. Avoid locating the unit in areas near frequently used doors and walkways, smoke-filled rooms, or areas where it may easily be knocked over.
Humidity Operating Non-operating	 20 – 80 % non-condensing 20 – 90 % non-condensing
Recommended Clearance	Back: Front: Sides:

For further information, see chapter **Physical specification, Page 96.**

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Installation precautions

Weight of vTanis

Risk of damage to devices

When placing a unit into or removing the unit from a rack:

Extend the rack's leveling jacks to the floor.

Ensure that the full weight of the rack rests on the leveling jacks.

Install stabilizing feet on the rack.

Static sensitive

Risk of damage to devices

A discharge of static electricity damages static-sensitive devices or micro circuitry.

Proper packaging and grounding techniques are necessary precautions to prevent damage.

Do not expose the unit to moisture.

Use the unit on a firm level surface free from vibration.

Do not place anything on top of the unit.

Unpacking the unit

Before unpacking the unit, clear a work surface to unpack the vTanis. Select either a table top location or if the unit is to be rack mounted an open rack location at least 2U spaces in vertical height.

Make sure that the intended operating location provides access to the network connection(s) which will be used and an accessible AC power outlet within 6 ft. of the unit.

If the temperature in the room where the unit will be installed varies by 15º C (30º F) from the room where the unit was stored, allow the unit to acclimate to the surrounding environment for at least 12 hours before unpacking it from the shipping container.

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Unpacking the vTanis:

1. Before opening and removing the vTanis from the box, inspect the container for shipping damage. If you notice any damage, report it to the shipping company immediately.
2. Open the vTanis over pack box.
3. Carefully remove the accessory tray and shipping materials from the top of the over pack box.
4. Remove the inner box containing the vTanis.
5. Open the vTanis box.
6. Lift the vTanis out of the carton and remove the bag from the unit.
7. Save the packaging materials for future use.

Do not place the unit on either end or sides as this may damage the unit.

Identifying the product components

Confirm that you received the following accessories in the over pack box (some items optional depending upon the user configuration):

- Power cord (region dependent)
- Application software CD
- Printed quick start guide
- vTanis document CD
- RDX® cartridges

Confirm that you received the following in the vTanis box:

- vTanis unit
- Rack mounting ears with included mounting hardware

Required additional equipment for a successful installation:

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- Ethernet cable(s)
- Screwdriver for installing rack mounting ears
- RDX® cartridges (if none ordered with unit)
- Application software (depending upon usage)

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First, read the chapter **Installation precautions, Page 23**.

Skip to **Chapter, Page 28**; if the unit will not be rack mounted.

Required tools:

- #3 Phillips screwdriver
- T10 Torx screwdriver

Rack mounting the vTanis:

1. Determine the location in the rack for the unit to be installed.
2. Use a pencil to mark the location on each vertical rail in the rack.
3. Install the rack ears of the unit using T10 Torx screwdrivers to tighten the Torx screws included in the rack mount kit.

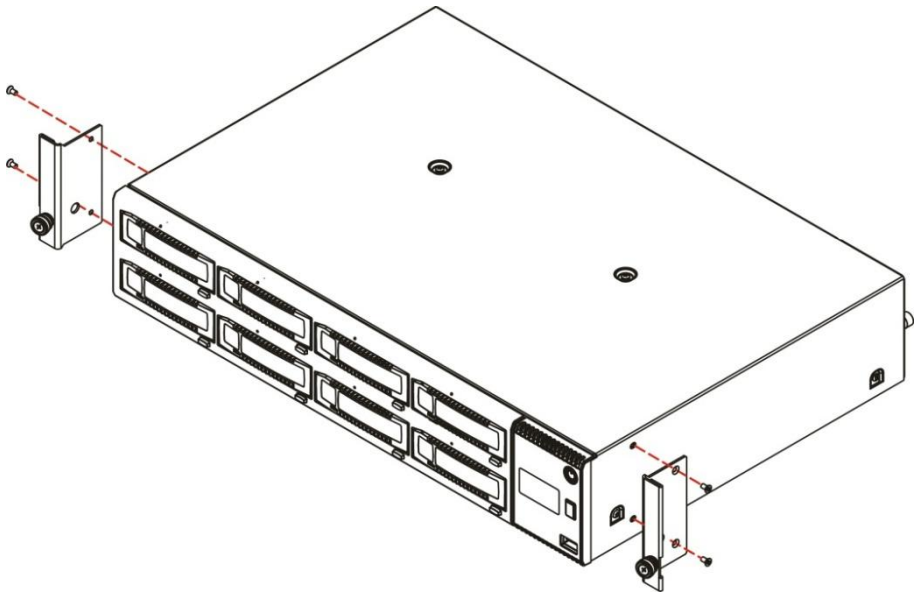

Figure 4 Installing the rack ears

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4. Secure the unit to the rack using a #3 Phillips screwdriver or your fingers to tighten the two captive thumb screw(s) on each side of the unit.

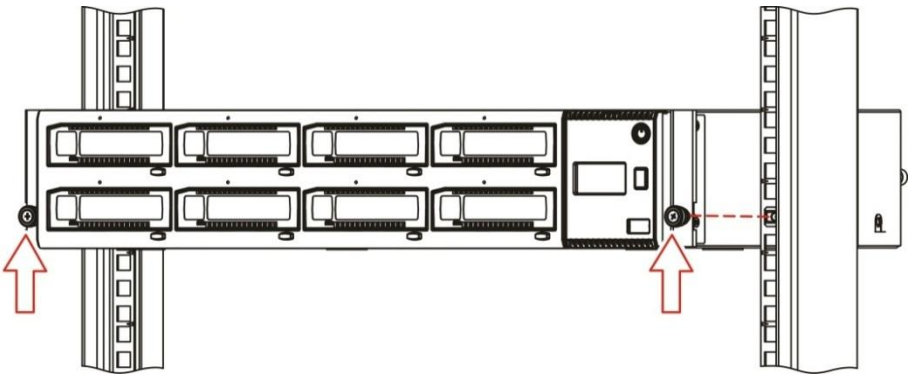

Figure 5 Securing the unit to the rack

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High voltage

Risk of electric shock

Do not remove cover (or back). No user-serviceable parts are inside.

Refer servicing to qualified service personnel.

Usage of unapproved power cords

Risk of personal injury

Risk of damage to devices

Before connecting a power cord to the unit:

Ensure that the power cord meets individual country specific safety requirements.

Use a sufficient conductor amp capacity to avoid overheating the unit.

The manufacturer disclaims all liability in the event a non-manufacturer approved power cord is used.

To connect the power cord to the unit:

1. Plug the power cord into the power connector (AC connector) on the rear panel of the power supply;
   see chapter **Rear panel, Page 18**.
2. Plug the power cord into the power outlet of the power supply.

To connect the network cable(s):

The connection to the Ethernet network is via an industry stand RJ45 copper interface on the rear panel of the unit; see chapter **Rear panel, Page 18.**

1. Inset the Ethernet cable into the Ethernet port #1 of the unit. When the plug is in the full seated position, a positive click should be heard.

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Powering up/down the unit

The vTanis power button indicator will be solid amber when AC power is present at the unit indicating the unit is in standby mode.

Before powering up the system insure that the network cable connection to the host system is plugged into the vTanis Ethernet port 1. Port 1 is the right hand port when looking directly at the rear of the unit. A live network connection is necessary to insure the unit either receives an IP address from the host network DHCP server or if DHCP services are unavailable automatically assigns a static IP address.

Press and release the power button on the front panel to power up the vTanis, during the power up process the indicator in the power button will change from solid amber to flashing green indicating the unit is in the process of becoming ready. The vTanis unit will take approximately 120 seconds (2 minutes) to complete the power up boot sequence. During power up a progress bar will be displayed after approximately 90 seconds providing boot progress indication for the remaining start up sequence operations.

The vTanis will always start from standby mode if the last power shutdown of the unit was performed via a normal shutdown to standby mode (shutdown initiated by the pressing the power button).

If however the unit was stopped or rebooted because of an AC power interruption the unit will automatically boot backup to operation mode without the necessity of a power button push. This allows the vTanis to recover from power errors without additional operator intervention.

After successful completion of the power up sequence, the rear network interface(s) will be available for RMI (Remote Management Interface) and iSCSI communication (requires configuration). The vTanis OCP (Operator Control Panel) will also become active and will display the vTanis unit's IP address for ETH1, please take note of this IP address which will be used to both access the RMI and for the iSCSI communication portal as well.

The OCP may be set to automatically rotate through the individual status screens by pushing and holding the display navigation button for three seconds then releasing the button (long push). If it is desired to pause the display at any time during this rotation sequence a "long push" will enter pause mode (long push to pause/long push to play). When the OCP display is paused the status screens may be stepped through by pushing and releasing (without holding) the OCP button (short push).

Pending errors will be indicated by the OCP backlight blinking amber accompanied by the display of a text based error message. Error messages may be cleared from the OCP display by acknowledging the message via a push of the display navigation button. Pending error messages may also alternately

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be cleared by a user logged in over the RMI by acknowledging the error within the system status information block of the RMI interface.

To power down the unit press and hold the power button for 4 seconds and release. The power indicator will flash amber indicating the unit is in the process of powering down. Once the unit has completed the power shutdown sequence the power indicator will be solid amber indicating the unit is in standby mode.

Do not insert RDX® cartridges until the preliminary vTanis configuration process is completed!

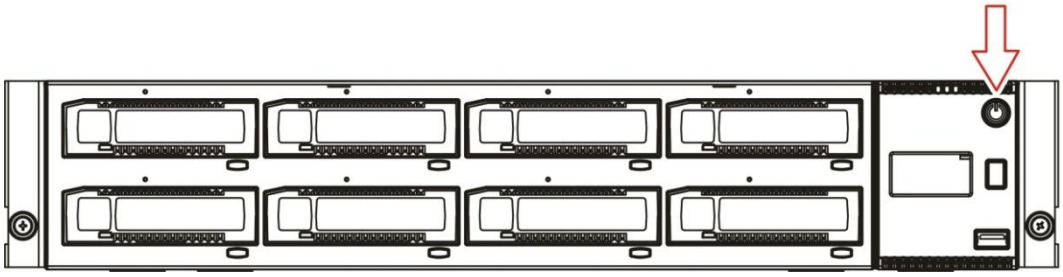

Figure 6 Power up/down the unit

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Product configuration

Product configuration process

Once the vTanis unit has been powered up the unit must be configured to the customers desired network settings and operational mode (based on target application software). In order for the unit to be configured to the customer's network it must be accessed via the built in RMI (Remote Management Interface). The RMI is accessed over the customer's local IP network using an internet browser application.

The vTanis is compatible with the following internet browser applications:

- Mozilla Firefox
- Internet Explorer
- Google Chrome
- Safari
- Opera

Initial IP address assignment

The vTanis comes configured to communicate over Ethernet port 1 (Ethernet port 2 is disabled) and will search for an IP address as follows:

1. After the unit completes the power up sequence it will search the user's local network for a DHCP server.
2. If a DHCP server is found it will receive the assigned IP address from the local DHCP server and use this address for operations, the DHCP address will appear on the units OCP.
3. If after 60 seconds no DHCP server is found/DHCP IP address assigned the unit will use the APIPA protocol to assign a static IP address, the assigned static IP address will appear on the units OCP.
4. Once an IP address is assigned the unit may be reconfigured to a new static IP address or redirected to a DHCP server by the system administrator logging into the unit over the RMI interface.

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The vTanis unit uses the web based RMI to allow the administrator to configure and monitor the unit. The vTanis IP address may be viewed over the OCP and is displayed between the cartridge monitoring screens for slot 8 and slot 1 (#1 out of 9 screens in continuous rotation) Once the vTanis units IP address is known browse to the unit with your web browser application (by entering the vTanis RMI IP address in your browsers address bar). You will have to enter “http://XXX.XXX.XXX.XX/” where the “X’’s indicates the actual IP address. The IP address protocol does not require leading zeros so http://172.16.1.43/ is a valid IP address.

The overall menu structure of the vTanis RMI is shown in the chart below, depending upon the class of user (Administrator, User, or Service) login some menu functions may not be available. For instance if logged into the RMI interface with User level credentials the menus for “CONFIGURE”, “MANAGE” and “DIAGNOSTICS” will neither be visible nor accessible by the user.

RMI flow chart

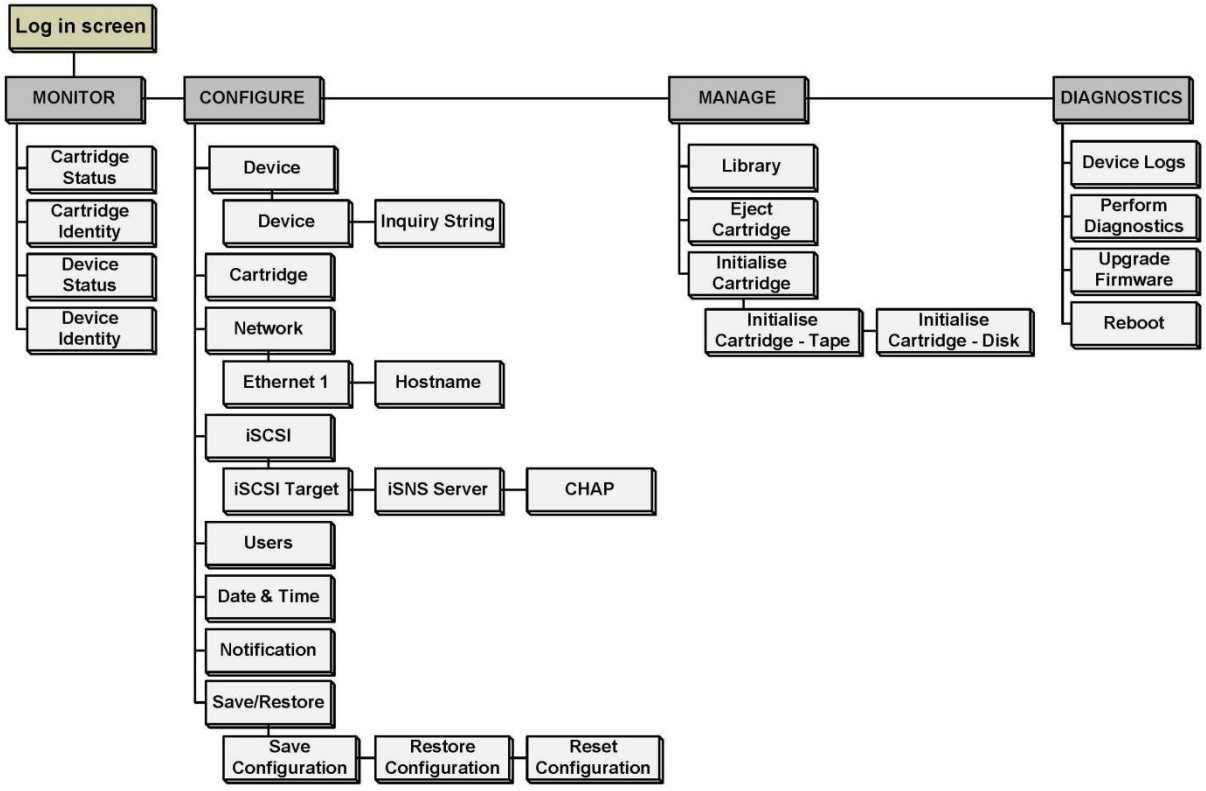

Figure 7 RMI flow chart

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Login in procedures

In order to access the vTanis remote management interface (RMI) it is necessary to first log into the RMI interface. Using the IP address visible over the unit's front panel OCP enter the IP address into your browsers address bar and navigate to the vTanis log in page. The RMI opening log in page is visible below.

Log in screen page

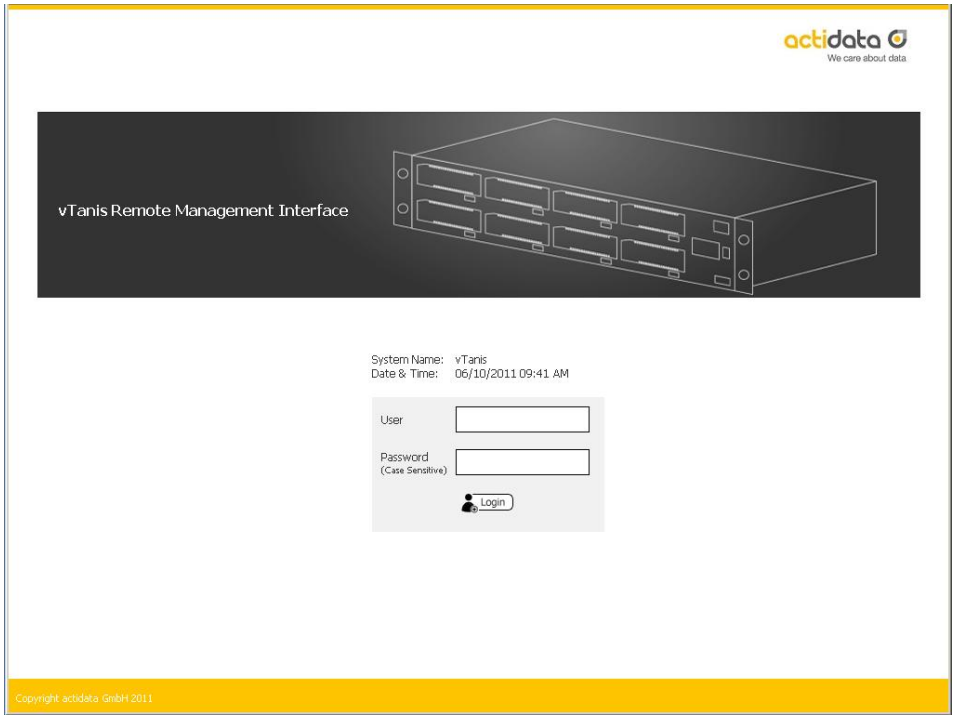

Figure 8 RMI log in screen page

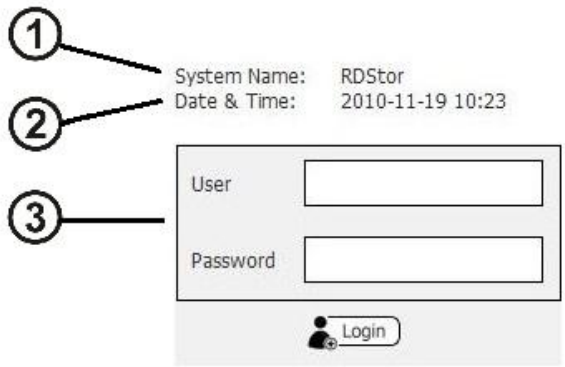

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Figure 9 RMI log in detail

- **① System Name:**
  Displays the name currently assigned to the vTanis unit, the factory default setting is “vTanis”. This field may be changed by the administrator under the “CONFIGURE/Device” “System name” tab. This field may only consist of alphanumeric characters.

- **② Date & Time:**
  The current system date and time displayed in MM/DD/YY and 12 h time with AM/PM indication format. This field may be changed by the administrator under the “CONFIGURE/Date & Time” “Date” and “Time” tab. These fields may only consist of alphanumeric characters.

- **③ User name & Password authentication:**
  This is the location were the user enters in their specific log in information. Access to RMI menus is granted by log in levels as follows:

Following are default account names and passwords:

User Level	Username	Password
User	user	std001
Administrator	administrator	adm001
Service	service	ser001

The user name and the password field are both case sensitive. Both fields are limited to 255 alphanumeric characters. New user accounts may be created (user name, user level, notification email address and password) by the administrator under the “CONFIGURE/Users” tab.

RMI features:

- The RMI has an identified class of users.
- The RMI grants access or ability to perform operations based upon user rights.
- The RMI grants the administrator and service levels full access to device set up, diagnostics, and logging.

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- The user level only provides the ability of the user to monitor device and cartridge status.

vTanis user levels (Access levels)

User Level	MONITOR	CONFIGURE	MANAGE	DIAGNOSTICS
Administrator	•	•	•	•
Service	•	•	•	•
User	•			

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RMI Home page

Upon a successful log in into the vTanis RMI all users will be directed to the vTanis home page which is “MONITOR/Cartridge Status”. An overview of the main graphic elements is displayed below. The main navigation is performed via selection (via mouse click) of the main topic bar (element 2 in the RMI home page chart) and then selection of the associated sub topics (element 4) in the chart. Key anchor elements are the active system graphic (element 5) and the system information block (element 6) which are visible in all RMI screens/modes.

RMI Home page

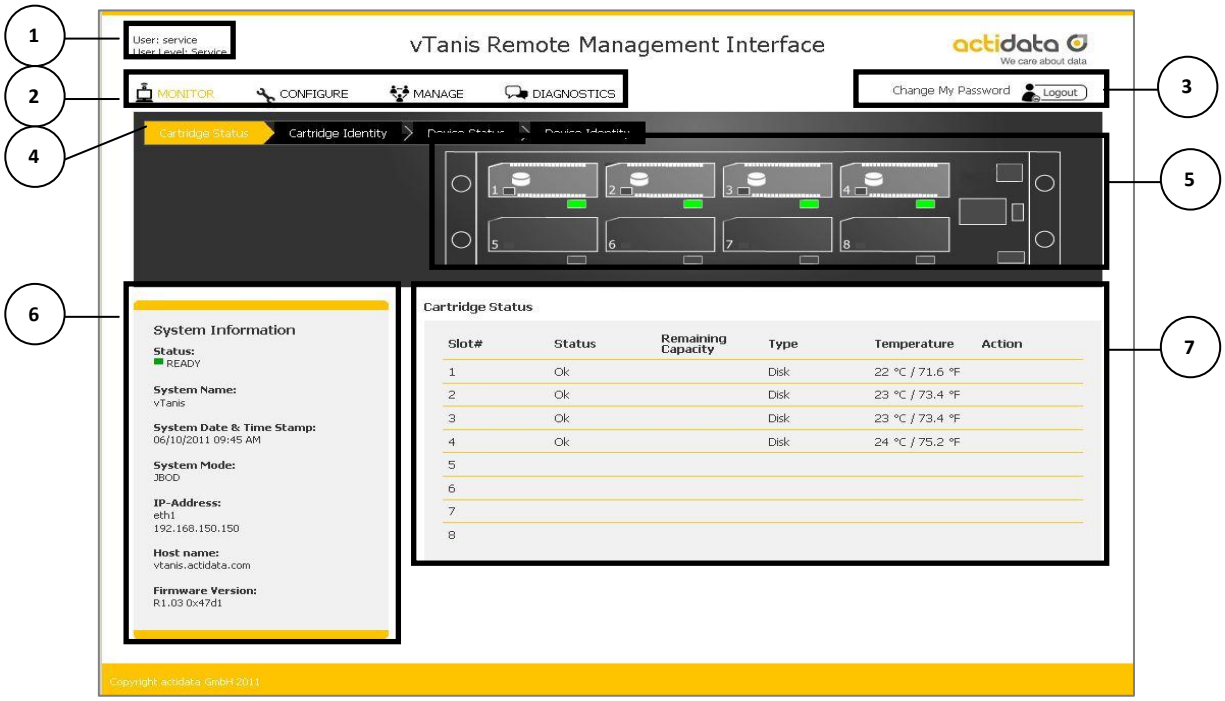

Figure 10 RMI home page

Number	Description
1	**Logged in user / Log in user level:** This field is visible in all screens; shows the current user account name and user credential level

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Number	Description
2	**Main topic bar (selected in red):** This field is visible in all screens; the four main RMI menus are accessed from this set of choices by selecting with a point and click. Operators with user level credentials will not have access to the “CONFIGURE” and “DIAGNOSTIC” menus.
3	**Log out button / Change password:** This field is visible in all screens; the user may change their password (pop up dialog) or logout via point and click.
4	**Sub topic bar (selected in red):** This field is visible in all screens; the content of the sub topic bar changes with the main topic selection.
5	**Active system graphic (mouse over for additional detail info):** This field is visible in all screens; the status of individual cartridge slots may be verified by the graphics. The system graphic and the OCP use the same icon indications; additional information is available via mouse over of each cartridge graphic (for slots which have cartridges inserted).
6	**System information block, global information/alerts:** This field is visible in all screens; the system information block covers key global parameters related to overall system status and identification. If the system has pending errors they will be indicated by the status icon and additional information will be available under the associated information button.
7	**Sub topic details:** The subtopic details change with the main topic selection.

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RMI System information block

The system information block provides an overview of global system information, the fields are summarized below.

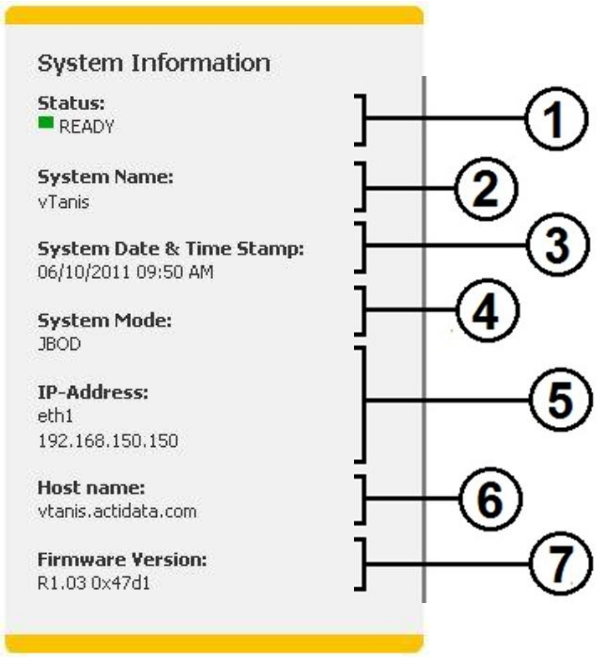

Figure 11 RMI system information

Number	Description
1	**Global system status:** This graphic indicates the system status by color; green indicates good status, yellow indicates warning status, red indicates critical error status- if the system is currently in either warning or critical error status mode additional information will be available via an information button icon located next to the status indication.
2	**System name:** The system name appears at log in and also with remote email alerts and may be assigned by the administrator.

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Number	Description
3	**Date/Time :** The system date and time is displayed here and is used for logging and remote notification time stamps.
4	**Current System mode:** This field displays the current vTanis system access mode.
5	**Ethernet address for port 1 & 2:** The current port IP address is displayed in this field.
6	**Host name:** The host name field displays the host name and domain name together. This naming will be associated with the IP address as the DNS name as well (may search for the host name or the physical IP address in the iSCSI driver.
7	**Firmware revision level:** The current unit firmware level and firmware image check sum are displayed in this field.

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Introduction to the vTanis OCP

The vTanis unit includes an LCD based display located on the right side of the unit's front bezel. Highlights of the OCP are:

- 64 dot high by 128 dot width graphics display
- Displays both text and icon based information
- Uses RGB (red/green/blue) capable backlight
- Under normal conditions backlight uses white light
- A flashing amber backlight is used to alert the user to error conditions in order to clear the flashing indication the error must be acknowledged via either an display navigation button push on the unit front panel or acknowledged through the remote RMI console by reading the error message in the system information block.
- Alternately any pending error condition will wake the backlight to a flashing amber error condition with text display of the error message

OCP Display rotation

Once the vTanis unit completes the power up boot sequence the OCP will become active. The OCP will display screen one, screen one is a unique amongst the other OCP screens and identifies the unit's IQN name, current IP address / status of Ethernet ports 1 and 2 as well as the unit current firmware revision level.

The normal display mode rotates through nine screens, screen one is followed by eight individual screens indicating slot status (if a cartridge is currently installed or not and some format parameters of the current cartridge).

After initial power up the unit will hold on screen one, once the addressing information is recovered from this screen the OCP may be set to automatically rotate through all screens by pushing and holding the OCP navigation button for a few seconds (long push) then releasing the button.

The general layout of the cartridge status screen is shown in the figure below:

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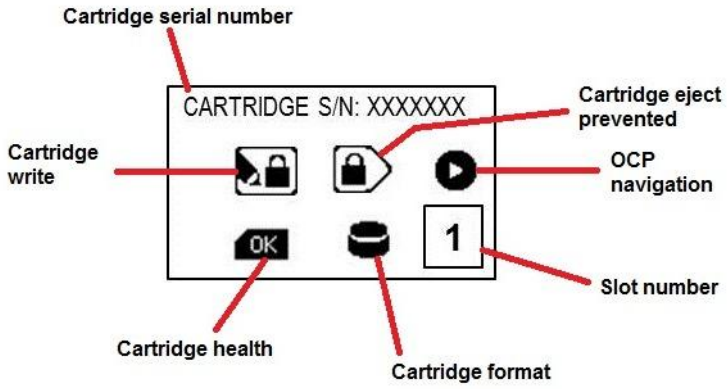

Figure 12 OCP cartridge status

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OCP Icons

The vTanis makes use of graphic icons to indicate some conditions to the user. These icons are used both on the local OCP display and over the RMI display in the active system graphic. The vTanis icons in use are shown in the figure below.

Group	Icon	Meaning
OCP Navigation		Step to next bay/cartridge info
		Pause at current screen
Cartridge Format		Disk LUN mode or disk format cartridge
		Tape format on cartridge (tape emulation)
Cartridge Status		Write to cartridge prevented (Write Protect)
		Eject of cartridge prevented (Prevent Set)
Cartridge Metrics (RMI)		Temperature
		Number of insertion cycles
		Accumulated operational time
Cartridge Status		Cartridge status not OK (only for OCP)
		Cartridge status OK (only for OCP)
		No cartridge inserted (only for OCP)

OCP Navigation

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The vTanis OCP supports the viewing option of pausing the display at any individual screen or if the display is already paused manually stepping through screens. The OCP navigation operates as follows:

- To pause the (currently cycling) display press and hold the OCP navigation button for approximately 3 seconds, the OCP will change to pause mode indicated by the OCP navigation icon changing to the step icon.
- To step the OCP display to the next screen (when the OCP is in pause mode) press and release (short button press) the OCP navigation button. You may repeat this operation to step through the OCP screen rotation until you reach the desired screen.
- To resume the normal OCP automatic cycling press and hold the OCP navigation button for approximately three seconds, the OCP navigation will resume the auto rotation mode indicated by the OCP icon changing to the pause icon.
- When in display rotation the vTanis OCP automatically cycles through the nine information display screens unless there is a pending error condition. Any pending error will cause a local alerting condition (indicated by text message in display/amber backlight flash).
- If there is a current error the error message may be acknowledged/cleared by pushing and releasing the OCP navigation button. Errors may also be cleared remotely over the RMI interface.
- Multiple errors will queue so it may be necessary to push the OCP button multiple times to clear errors, with each push any pending error messaging will be updated to indicate the condition which triggered the error.

iSCSI Connection

In order for data transfer to occur over the network connection it is necessary to install an iSCSI Initiator on the host computer system. The following directions pertain to the Microsoft operating systems.

The Microsoft iSCSI Initiator comes included with Windows 2008, Windows 2008 R2 and Windows 7, for other Microsoft operating systems you may search the Microsoft Web site for the Microsoft iSCSI Initiator.

Download the iSCSI application and install per the instructions below.

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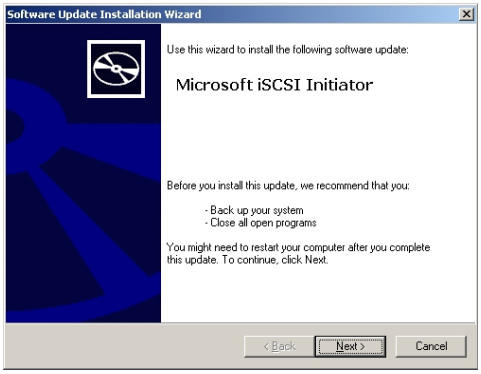
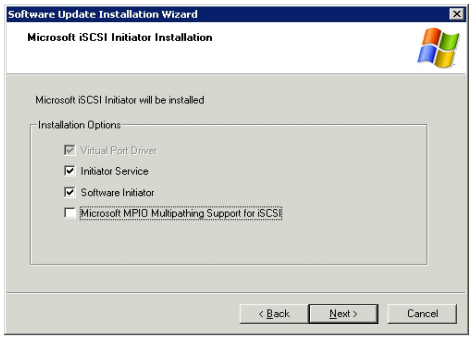
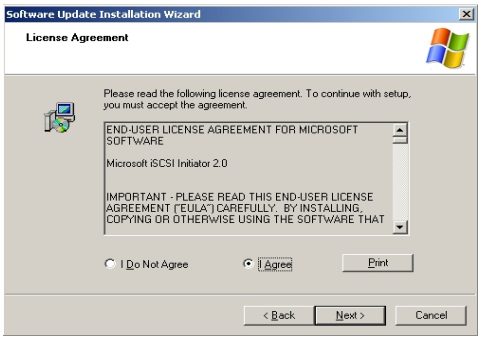
General Set up of the iSCSI Initiator

	1. Download the iSCSI software installation package from the Microsoft web site. 2. Start the Microsoft iSCSI installation wizard and click next
	3. Select “Initiator Service” and Software Initiator, click next. DO NOT install “Microsoft MPIO Multipathing Support for iSCSI”.
	4. Select “I Agree” and then “Next”.

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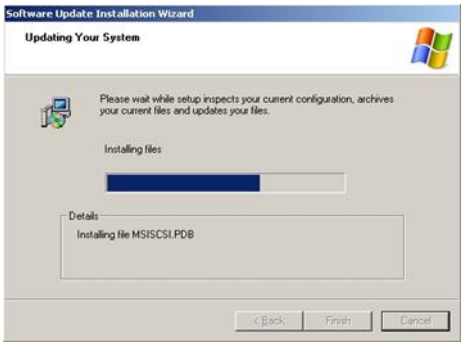
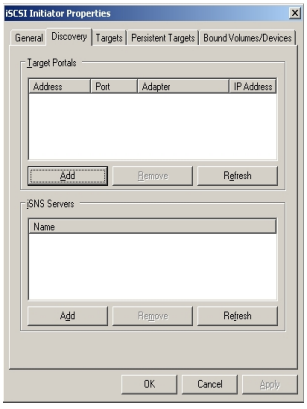
	5. Files will install then choose “Finish”.
	6. Click “Finish”.

iSCSI Target set up

Once the iSCSI Initiator is installed the next operation is to connect the vTanis unit to the operating system by identifying it as an iSCSI Target. The following procedure is used to set up the iSCSI Target.

	1. Open Microsoft iSCSI Initiator 2. On the “Discovery” tab and under “Target Portals” click “Add”

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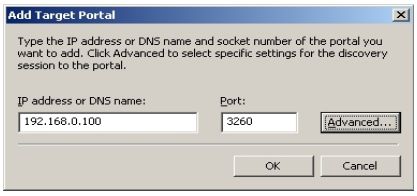
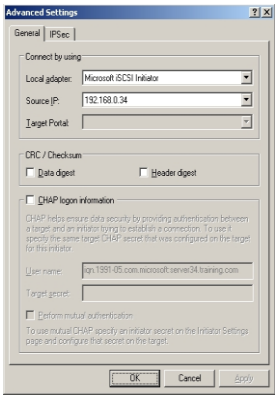
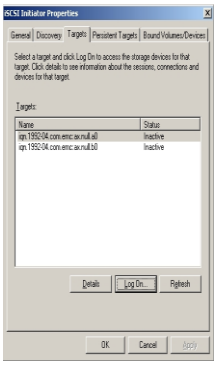
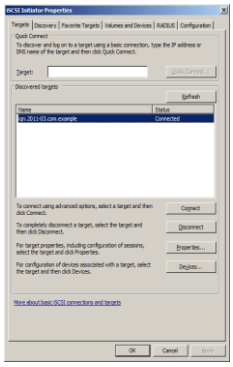
	3. Type the current IP address (for DNS or static IP address) or the DNS name (displayed as “Host name” in the system information block of the RMI) of the vTanis unit then click “Advanced”.
	4. On the Advanced Settings General tab choose 5. Local adapter – select Microsoft iSCSI Initiator. 6. Source IP – select the appropriate device IP address. 7. Click “OK”.
 	8. The iqn for the vTanis unit should be shown under available targets. 9. Highlight the vTanis iqn by clicking on it. 10. Depending upon which version of MS Initiator in use you may need to either click “Log On” or “Connect” The vTanis iqn should now change to connected; the vTanis is now connected via iSCSI. Proceed with application software installation

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Setting the vTanis operation mode

The vTanis comes configured from the factory preset for tape library emulation, if you have completed installation of the iSCSI initiator and connected to the unit via the targets tab and you are planning on using tape application backup software you may now install your software. If you are planning on using the vTanis in a mode other than tape emulation attachment you need to change the operation mode of the vTanis via the RMI interface.

The operation mode selected will apply to the entire (all eight slots of the) vTanis unit.

To accomplish the operation mode selection you must be logged into the RMI with administrator privileges.
You navigate to the “CONFIGURE/Device” tab. Under this page there are two sub tabs, “Device” and “Inquiry String”. The “Device” tab contains two selector fields.

The first field is “System Mode” which uses a dropdown box to allow the administrator to select the operation mode of the device. The operation mode choices are ‘Tape Library”, “Disk Library”, and “JBOD”. The vTanis system comes preconfigured from the factory as default in the “Tape Library” operation mode.

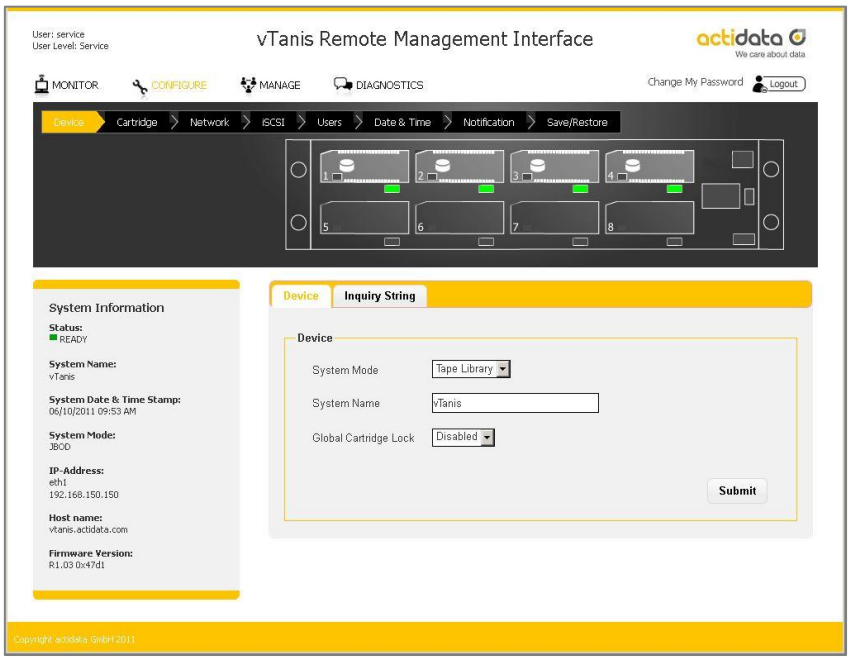

Figure 13 RMI configure device

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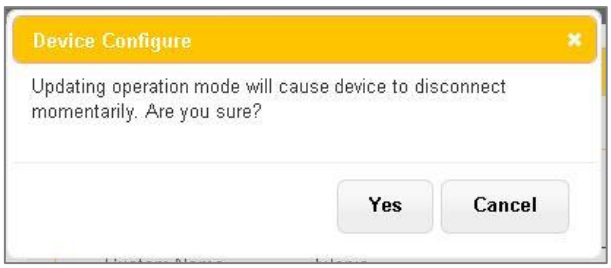
To change the vTanis configuration the desired operation mode must be selected from the “System Mode” box. Then the “Submit” button must be selected by the administrator for the changes to be applied, a confirmation dialog will appear as follows:



Unless the correct operation mode is selected for your particular environment data access to the vTanis may become unavailable after a mode settings change.

Also it may be necessary to delete and reconnect the iSCSI connection then reboot the computer system hosting the data application which will control the vTanis unit to insure proper detection of the vTanis system.

Setting the model name inquiry

Under the “CONFIGURE/Device” tab there is an “Inquiry String” tab. Here the administrator may set the desired inquiry string data.

The vTanis comes preconfigured for usage with most backup applications. Selecting a different inquiry string may cause the vTanis to not be recognized by the backup application.

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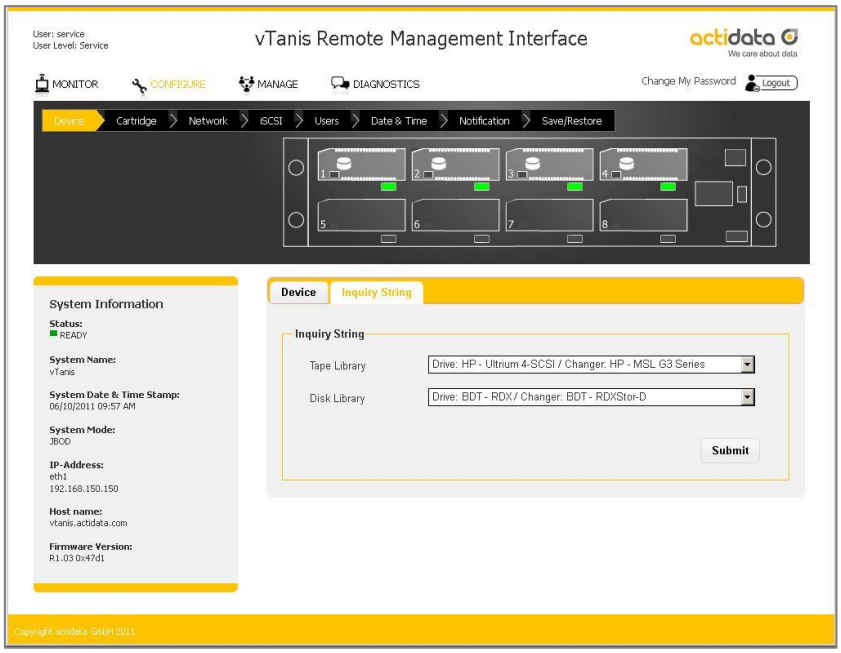

Figure 14 RMI configure inquiry string

In order for the selected inquiry string to be applied the user must choose the desired inquiry string then click on the “Submit” button, a confirmation dialog will appear as follows:

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Special note: Tape library mode

The vTanis tape library mode allows RDX® cartridges to be recorded to sequentially like traditional backup tape devices. In order to make use of this mode the standard RDX® direct access format and file system is moved to a small partition on the RDX® cartridge and a large hidden partition is created for recording the tape format emulation. When an RDX® cartridge is formatted as a tape cartridge the small partition remains so that standard RDX® systems can recognize the cartridge has been formatted to emulate tape. Please do not store any user data files in the visible partition.

Usage of the vTanis in tape library mode requires pre-formatting of the RDX® cartridges into the tape format mode before they may be used with tape backup applications.

RDX® cartridges which have been formatted into tape mode will not data interchange with single RDX® docks (single RDX® docks will be incapable of reading vTanis tape mode cartridges).

Pre-formatting RDX® cartridges to tape library mode

The vTanis supports a function to prepare standard RDX® cartridges for tape emulation use. This formatting process is called “Initialize Cartridge”.

To convert RDX® cartridges into tape emulation format the vTanis system must be set to the “Tape Library” mode in the “CONFIGURE/Device” tab (default setting from the factory). The administrator then selects the “MANAGE/Initialize Cartridge - Tape” tab and selects which cartridge(s) will be formatted to the tape emulation format.

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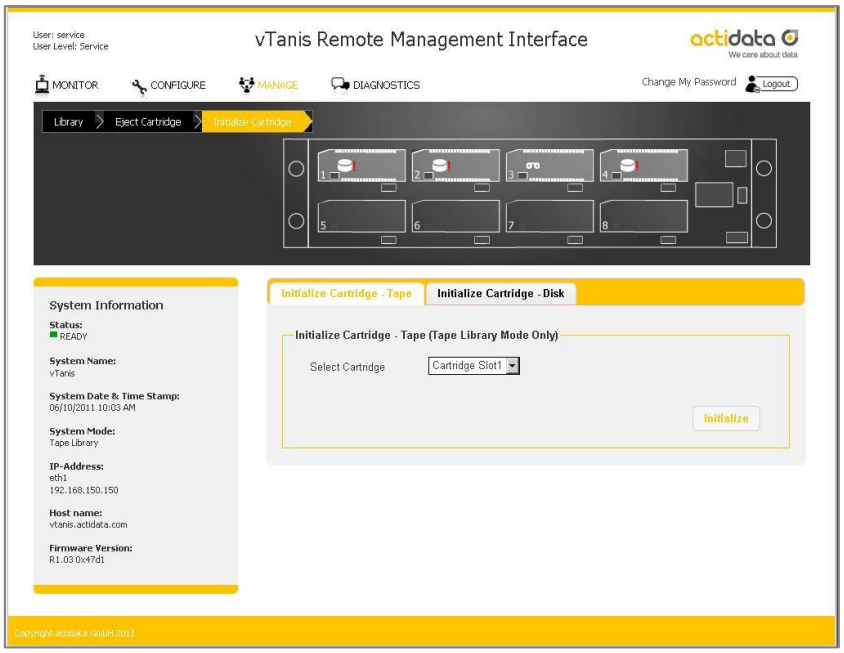

Figure 15 RMI initialize cartridge

The vTanis will only display cartridge positions with actual cartridges inserted in the unit; an attempt to format a cartridge which has the write-protect switch set will result in "Cartridge in Slot X Activated Failed".

Initializing the RDX® cartridge into tape mode or from tape format back to disk format destroys any previously written user data on the cartridge (the RDX® cartridge will contain no user data - be blank).

Re-formatting tape format RDX® cartridges back to standard RDX® disk

To convert previously tape formatted RDX® cartridges back into standard RDX® disk format the vTanis system must be configured as a tape library. The administrator then selects the "MANAGE/Initialize Cartridge - Disk" tab and selects which cartridge(s) will be formatted back to standard disk format.

Conversation of cartridges from tape emulation back to disk format is done using the FAT32 format. If the user desires to place a different file system format on the cartridge they may choose to use windows (right click on cartridge icon in windows desktop) to format with NTFS or other format options.

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Labeling tape format cartridges (optional)

If the vTanis system will be operated as a tape library and the administrator has already created tape format cartridges they may optionally decide to assign custom labels. Custom RDX® cartridge labeling may be created under the “CONFIGURE/Cartridge” menu.

To alter the cartridge label which will appear as the tape inventory tag for the cartridge the administrator may select the cartridge and then choose the edit button. There will be a pop up dialogue where you may enter a custom label up to 25 characters long.

This custom label will both be displayed in the vTanis RMI and shown by the volume label information returned by the vTanis to the tape backup application. It is strongly recommended that if the administrator intends to use custom labels they first assign these labels before the RDX® media is added to the tape application media set.

Also, the custom assigned label will only be available in the tape emulation mode. The cartridge label will always appear as the factory assigned volume label when the cartridge is used in JBOD mode (even if it remains tape emulation format). The custom label may be deleted at any time and the cartridge will revert back to the factory assigned cartridge label.

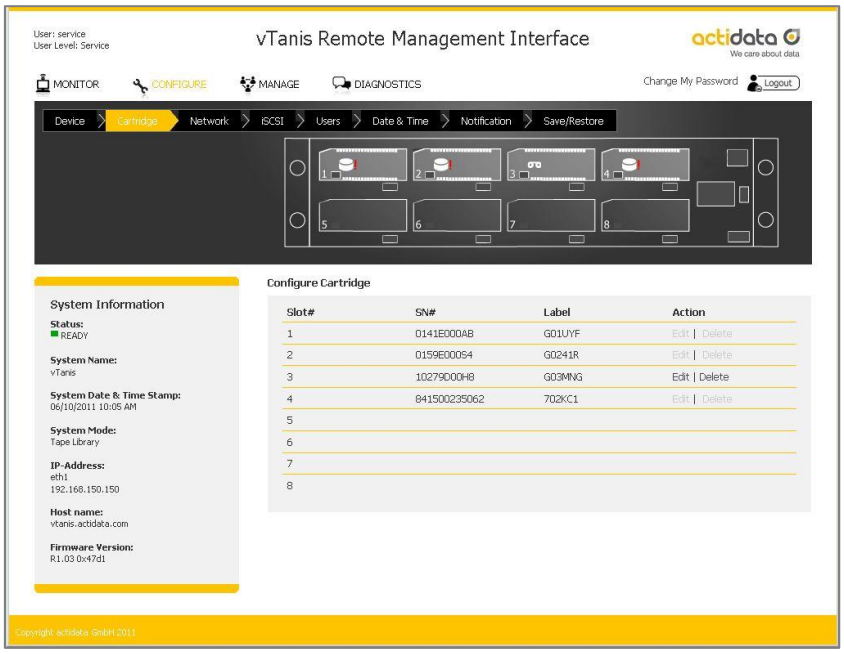

Figure 16 RMI configure cartridge

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Network settings

To establish network settings for the vTanis unit the administrator may select the “CONFIGURE/Network” tab. The following settings are located under the “Network” tab:

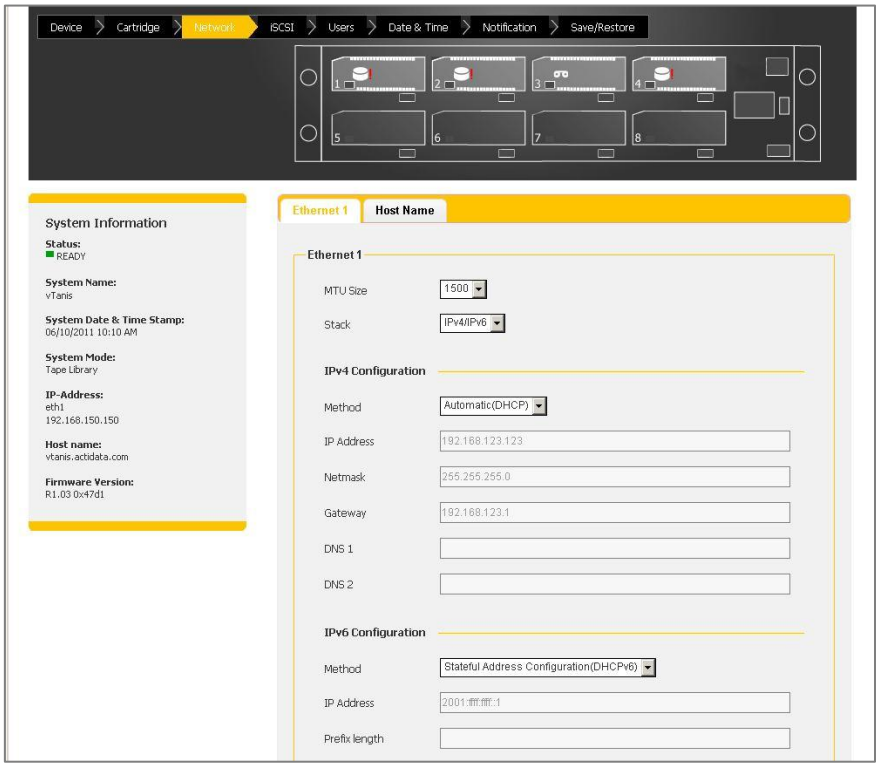

Figure 17 RMI configure Ethernet

Ethernet1:

This setting allows the administrator to either “Activate” or “Deactivate” the network ports on the rear of the unit. Ethernet port #1 is the rightmost port when looking directly at the rear of the unit.

MTU Size:

The maximum transmission unit size controls the maximum data packet size over the network. 1,500 is the default setting.

Stack:

The stack selects the version of the Internet protocol the vTanis will use when communicating on the network. Selection options are IPV4, IPV6, or IPV4/IPv6. The default setting of the vTanis unit is IPv4.

Method:

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The method will select the IP addressing mode the vTanis will use. The two options are DHCP or manual. The vTanis default configuration is DHCP.

- DHCP - this means the vTanis will seek out the DHCP-sever on your network and automatically obtain an IP address from the server each time it powers up.
- Manual - the IP address set in this page will be the IP address the unit will use each time it powers up.

IP Address:

If the method is set to Manual this is the IP address that the vTanis will present over the selected port.

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Netmask:

If the vTanis is configured to use DHCP the net mask will be issued from the DHCP server. If you are using a static IP address (manual method) enter the IP mask in this box.

Gateway:

Enter the IP address of the network gateway.

DNS 1:

This is the IP address of your name server (DNS server). A DNS server allows the vTanis to communicate with other network clients via their host name. If you have a DNS Server on your network, enter the IP address in this field.

DNS 2:

This is the alternate IP address of your name server (DNS server). A DNS server allows the vTanis to communicate with other network clients via their host name. If you have a DNS server on your network, enter the IP address in this field.

In order for any changes on this page to be applied the "Submit" button must be set.

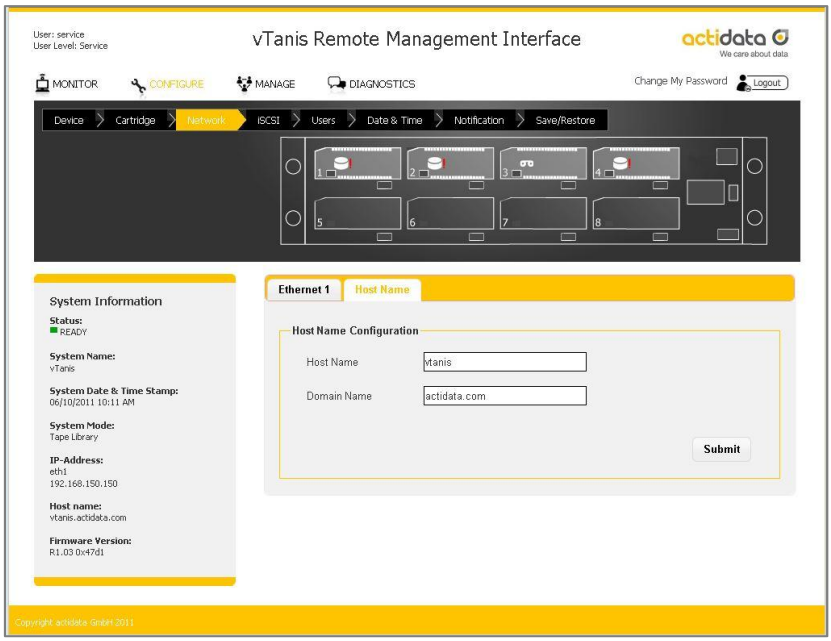

Figure 18 RMI configure hostname

Host Name:

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In this box enter the name you wish to use to use to address this vTanis in the future. It is recommended that you use a name that is relevant to its location and or its purpose.

Domain Name:

In this box is the domain the vTanis is registered in and may be updated by editing the name and submitting the changes.

In order for any changes on this page to be applied the "Submit" button must be set.

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iSCSI Settings

iSCSI settings are accessed under the “CONFIGURE/iSCSI” tab, the settings are as follows:

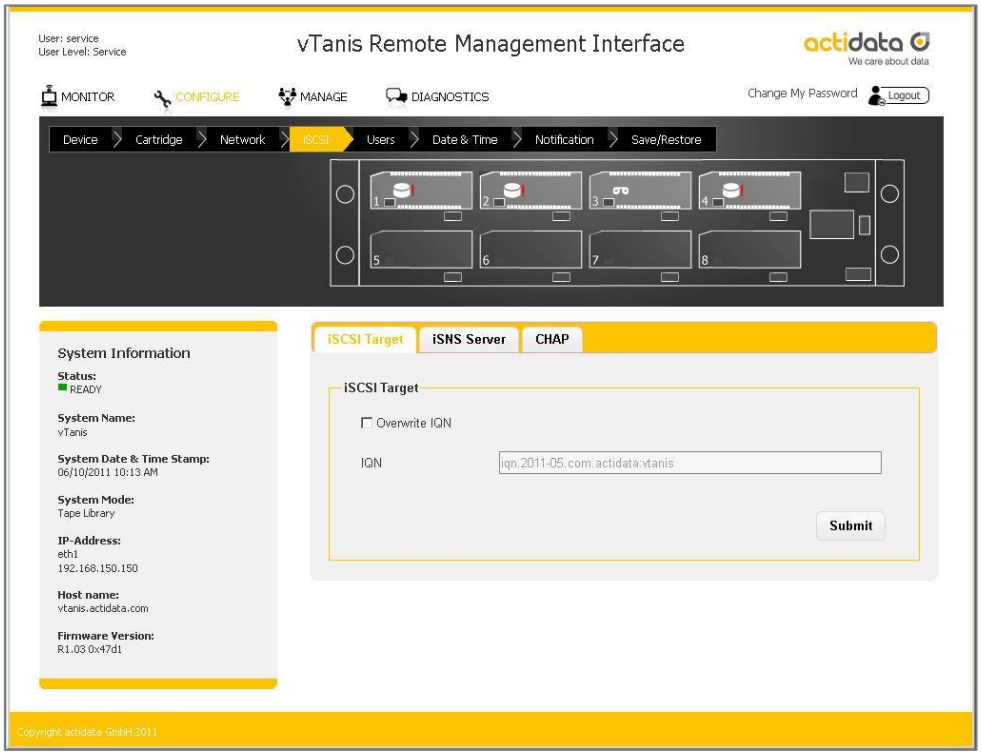

Figure 19 RMI configure iSCSI target

Overwrite IQN:

This check box will allow the administrator to assign their own unique IQN name to the vTanis unit. An IQN may be up to 255 characters long. To apply a new IQN name to the device the Overwrite IQN box is checked, the desired IQN is programmed in the IQN field, and the submit button is pressed to apply changes.

IQN - iSCSI Qualified Name:

iSCSI naming convention that uniquely identifies every device. An IQN may be up to 255 characters long.

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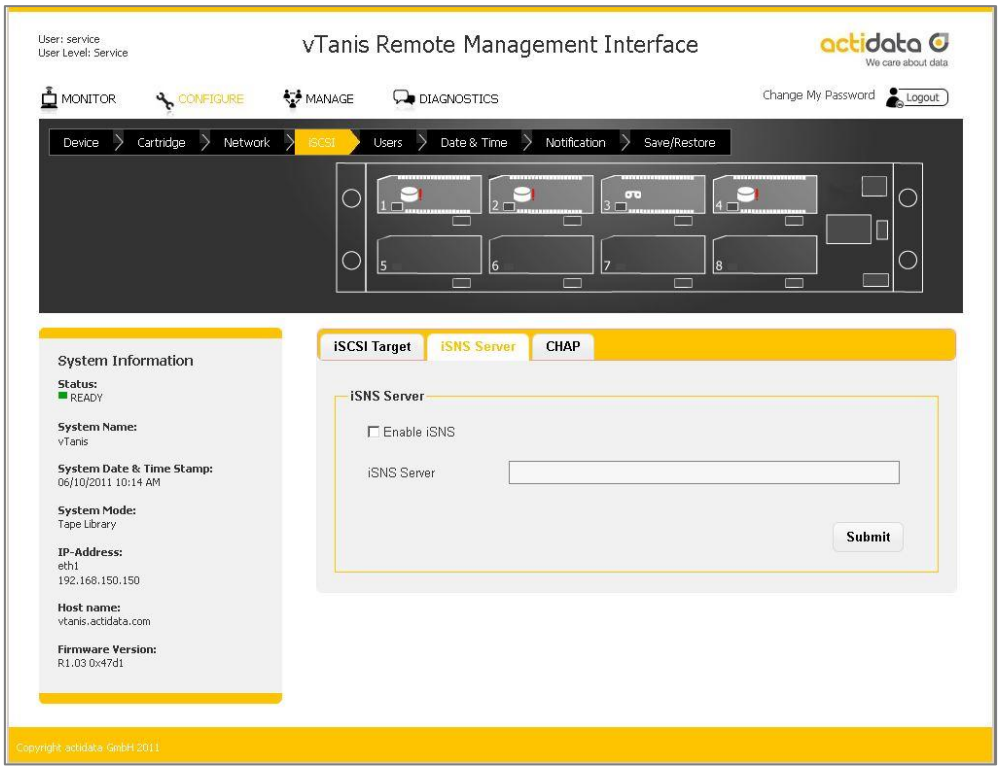

Figure 20 RMI configure iSNS server

Internet Storage Name Service (iSNS)

This field allows for the automated discovery, management, and configuration of iSCSI devices from a central point. If this option is enabled the vTanis will register its resources with a central iSNS-server. To enable iSNS on the vTanis, click the tick box “Enable iSNS” and enter the IP address for the iSNS-Server in the “iSNS Server” field and click the submit button.

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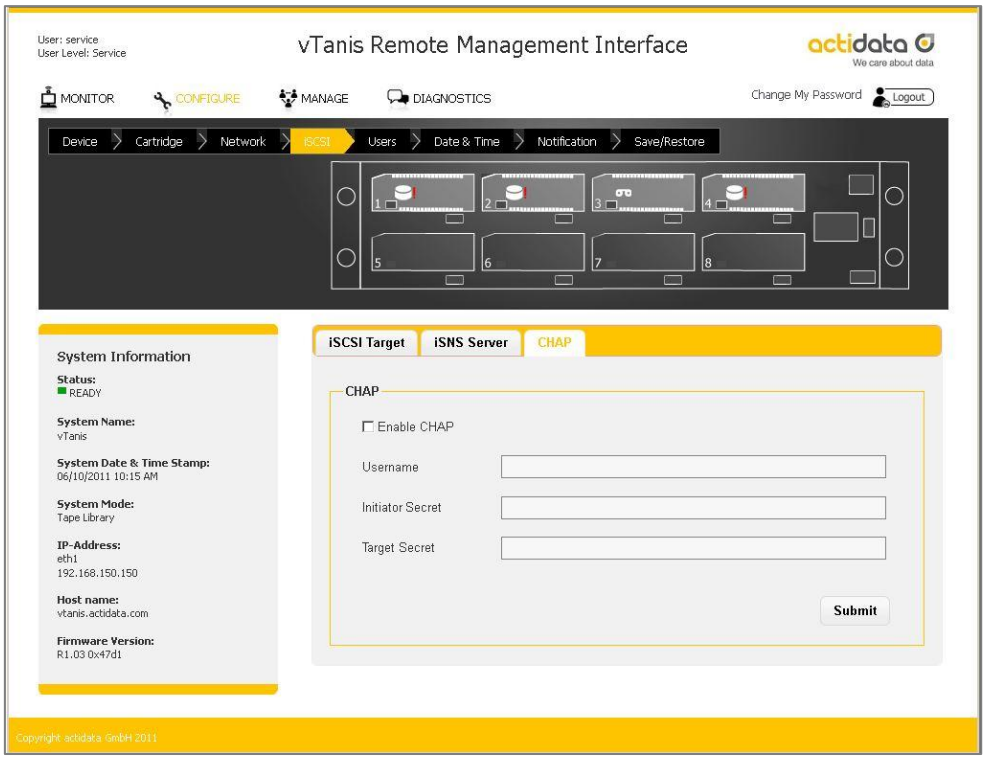

Figure 21 RMI configure CHAP

CHAP is an authentication scheme used by servers to validate the identity of clients and vice versa. When CHAP is enabled, the initiator must send the correct “Username” and “Target Password” to gain access to the vTanis. The “Initiator Secret” field is provided to allow iSCSI mutual CHAP. If mutual CHAP is selected on the Initiator, the vTanis will authenticate itself with the initiator using the supplied initiator secret.

To enable CHAP click the ‘Enable CHAP” tick box and enter the following details in the remaining fields:

- Username – this is the username that the iSCSI Initiator must use to gain access to the iSCSI bridge
- Initiator Secret – this is the password that the iSCSI bridge will send to the iSCSI Initiator during mutual CHAP
- Target Secret – This is the secret defined by the iSCSI bridge and will be sent from the ISCSI Initiator to authenticate the iSCSI Initiator.

The two CHAP secrets must be between 12 and 16 characters long and both Initiator and Target Secrets must be different.

Once the details are set the submit button must be pressed to apply the changes.

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User settings

The ‘Users”-tab is used by the administrator to change default passwords and/or create new users. Default passwords for the generic administrator and user fields may be changed from factory defaults by selecting the edit button behind the associated user name. The generic administrator and user names cannot be changed however email notification and password may be changed on these user accounts. The service account name and password may not be changed to preserve service personal access.

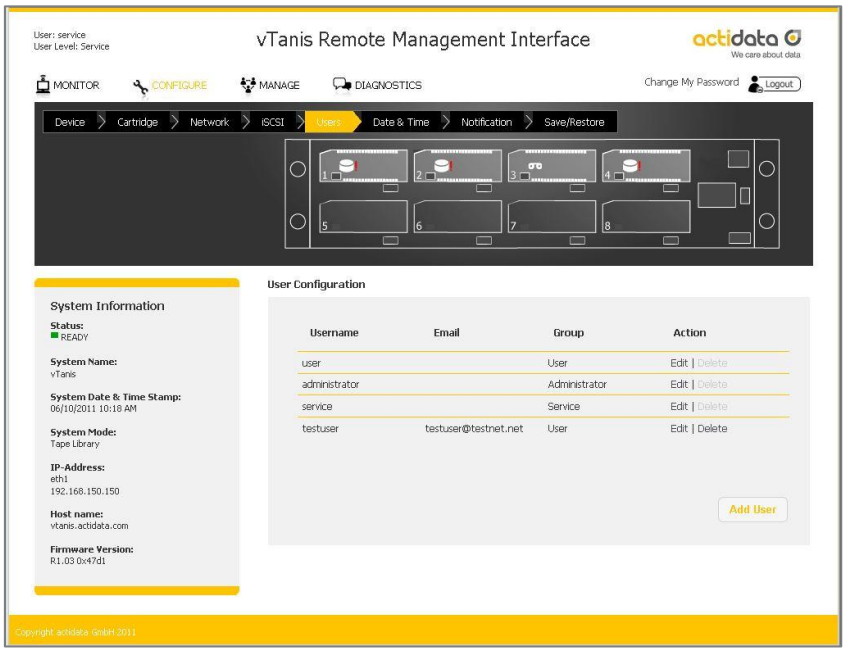

Figure 22 RMI configure users

New users may be created by selecting the “Add User” button which will pop up a screen to enter the following fields:

Username:

The log in name of the user account, this field is limited from 3-16 characters, no special characters are allowed, must not begin with a number, and be all lower case.

Email:

This is the email address associated with this user name for status notifications from the system. This field must be between 6-80 characters long.

Password/Password confirmation:

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The password with verification for the user account, this field is must be at least 5 characters long but not more than 16 characters long, no special characters, and must not begin with a number, and be all lower case.

Group:

This drop down dialog allows the administrator to assign access rights to the account as follows

User level:

User level access only allows access to the “MONITOR” functions of the RMI (The user cannot change any configuration settings/add user accounts/ or reformat/create tape format cartridges).

Administrator level:

Administrator level grants access to all functions within the unit including “MONITOR”, “CONFIGURE”, “MANAGE” and “DIAGNOSTICS”.

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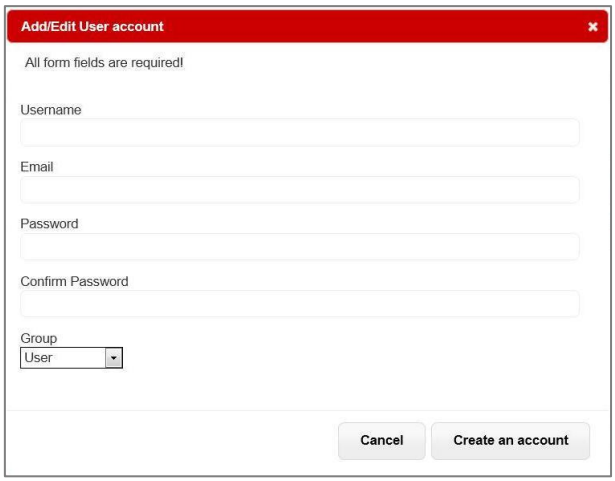

Figure 23 Add/Edit user account

Date and time settings

The date and time settings screen allows the user to set the library system date and time. This time and date information is displayed in the system information block and also used for time stamping log entries and remote notification messages from the vTanis unit to remote users.

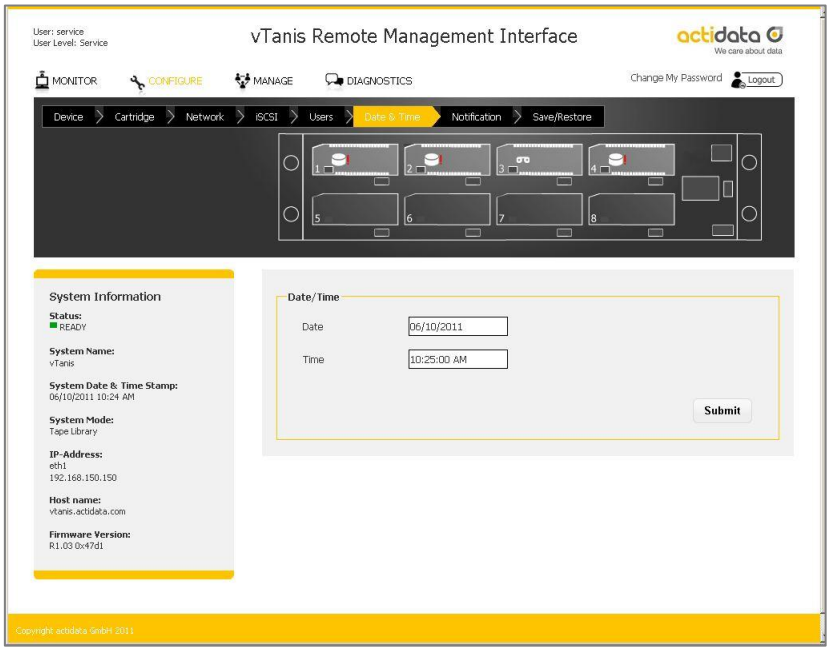

Figure 24 RMI configure date/time

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The date may be sent by clicking in the date field and entering the date in MM/DD/YYYY format or alternately using the calendar tool which pops up and selecting the year/month/date and then submitting the change.

The time may be set by clicking in the data field and entering the time in 24 hour time format or alternately using the time setting tool to select hours/minutes/seconds or clicking the “Now” button which synchronizes the library time with the time of the computer hosting the RMI. Once set the changes must be updated to the unit by clicking the submit button.

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Notification settings

The notification settings tab has the following operators:

Enable E-mail notification check box:

When checked and a SMTP mail server is specified the vTanis unit will send email notification to the selected user.

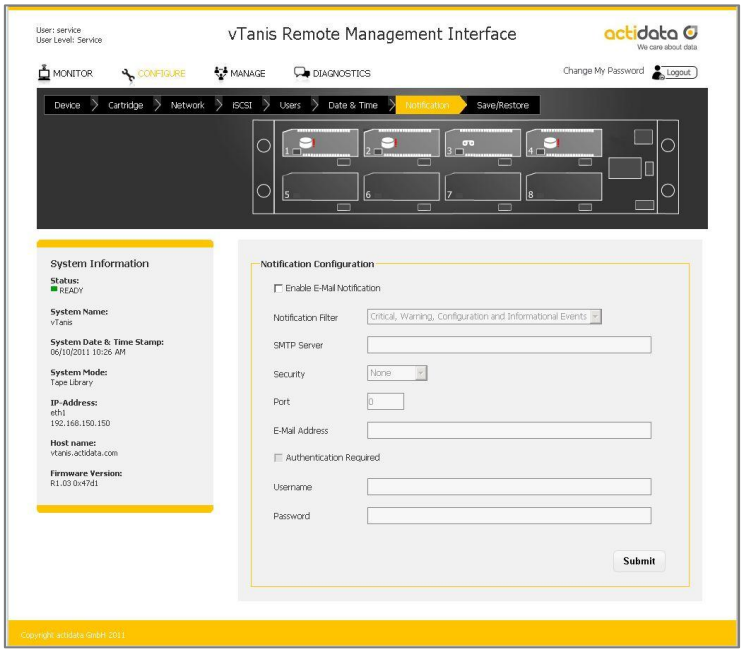

Figure 25 RMI configure notification

Notification Filter:

The notification filter is a drop down selector that allows the administrator to select from four classes of notification as follows;

Critical Events:

The specified email address will be notified whenever severe errors requiring operator intervention to resolve or in case of detected hardware failures.

Critical and Warning Events:

The specified email address will be notified whenever any critical events occur as well as warning events which indicate error conditions such as incorrect format cartridges for the selected operation mode-etc.

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Critical, Warning and Configuration Events:

The specified email address will be notified whenever any critical events occur, warning events occur as well as configuration events which indicate changes in unit configuration, operating mode, addition of users, etc.

Critical, Warning, Configuration and Informational Events:

The specified email address will be notified whenever any critical events occur, warning events occur, Configuration Events occur as well as information events which indicate monitoring normal operations.

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SMTP Server:

Enter the address of the email server of the individual you would like to receive the errors of warnings.

Security:

You may select to enable either SSL/LS or STARTTLS security via the drop down selector.

Port:

Enter the send/receive port number for the email traffic.

E-mail Address:

Enter the email address of the individual you would like to receive the errors and/or warnings.

Authentication:

Check if sender authentication is required

Username:

Enter the authorized user account name for connecting to the selected SMTP server.

Password:

Enter the authorized user password for connecting to the selected SMTP server.

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Save/Restore configuration

Save Configuration:

This tab allows a user to save the current user programmed configuration values/settings to support backup of settings and also to support unit replacement/service. Settings may be stored to a location on the RMI host computer via selecting the Save configuration button, downloading the file and using the browser pop up to select a storage location via the “Save as” function.

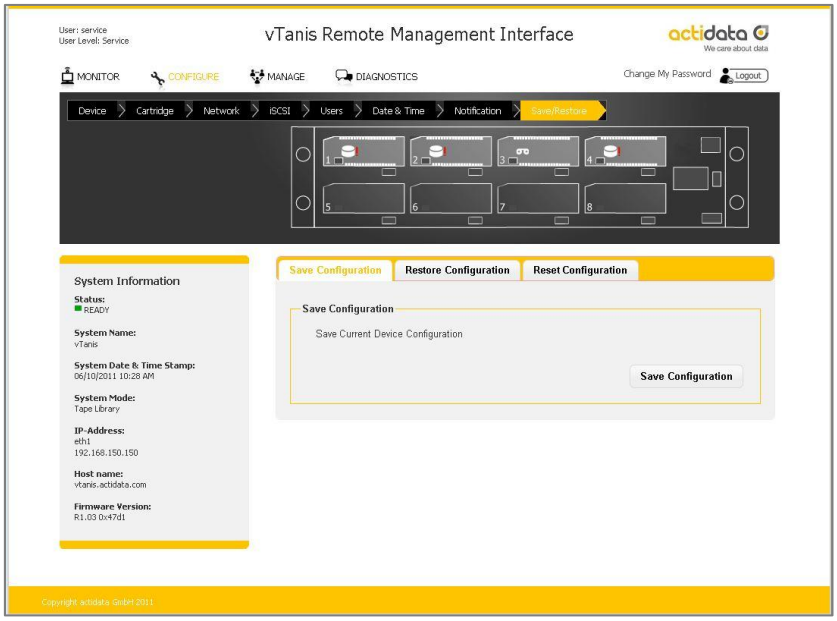

Figure 26 RMI configure save/restore

It is highly recommended that once the initial unit configuration is completed and the unit is operating properly the administrator use the save configuration function to back up their unique settings.

A software or rear panel reset will clear all administrator added configuration data including administrator created user accounts and notification settings.

Restore Configuration:

This function allows a user to restore a previous user saved configuration values/settings from a file created by the save configuration function. The file may be located by selecting the “Browse” button within the “Restore Configuration” tab.

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Reset Configuration:

This function restores all factory default settings- including resetting default passwords, IP addressing, and operating modes. Depending on network settings resetting defaults may cause loss of communication with the unit or require you to adjust network settings to regain access to the unit.

Reset configuration may also be accomplished by using a paper clip and depressing the “Hard reset port” switch for 3 seconds then releasing.

See **Page 18** for location of the hard reset switch on the rear panel of the unit.

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Monitoring the unit cartridge and device identity/status – The MONITOR tab

The vTanis unit user home page is the “MONITOR” tab for all account logins, following is a brief description of each function.

Cartridge status screen

Slot #:

This field shows the row heading indicating the slot number.

Status:

Ok indicates normal operation of the cartridge, error indicates a problem with the RDX® cartridge.

Remaining Capacity:

This field shows the remaining storage capacity of the media when in tape emulation mode only- note that in JBOD mode cartridge remaining capacity must be viewed from the host file system.

Type:

This field indicates the format of the cartridge as either tape or disk. Using the vTanis in tape library emulation mode requires that the cartridges be formatted as tape.

Temperature:

This field shows the individual cartridge temperature in both Centigrade and Fahrenheit scales.

Action:

This field is reserved for future use.

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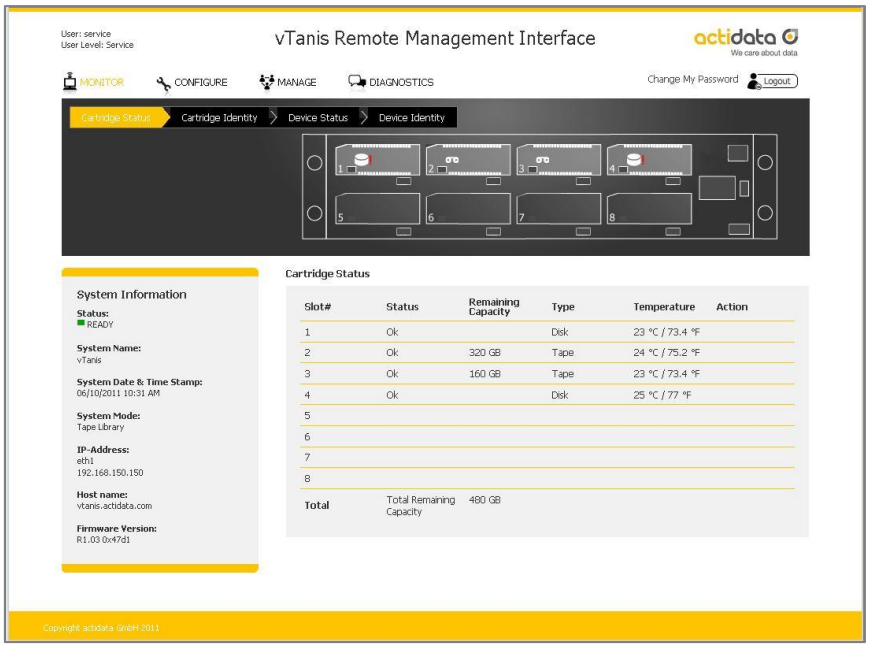

Figure 27 RMI monitor cartridge status

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Cartridge identify screen

Slot #:

This field shows the row heading indicating the slot number.

SN#:

This field displays the physical RDX® cartridge serial number.

Label:

This field displays the cartridge label, note that this label field will always display the default cartridge label when the vTanis system is operated in JBOD mode. If the vTanis system is being operated in tape library emulation mode using RDX® cartridges which have been formatted as tape the label will be either the default cartridge label or if the administrator has assigned a custom label to the cartridge in the “CONFIGURE/Cartridge” menu the custom label will be displayed.

Capacity:

This field shows the storage capacity of the RDX® cartridge in GB.

Type:

This field indicates the format of the cartridge as either tape or disk. Using the vTanis in tape library emulation mode requires that the cartridges be formatted as tape.

Action:

This field is reserved for future use.

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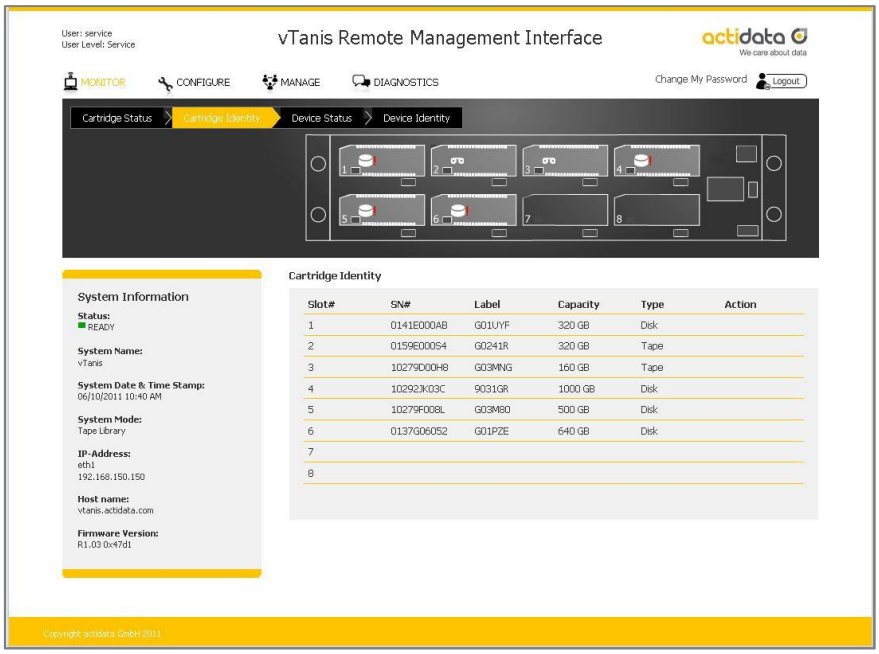

Figure 28 RMI monitor cartridge identify

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Device status screen

Status:

This status is the overall system status; it is also displayed in the system information block.

Name:

This field displays the system name.

IP Address:

This field displays the IP address for active ports- this address will provide access both to RMI connection as well as iSCSI connection.

Total Power On Time:

This field displays the total power on time since the last system reboot event.

Temperature:

This field displays the current system temperature in both Centigrade and Fahrenheit scales.

Slots Free/Available:

This field displays the number of empty cartridge slots followed by the number of slots which currently have cartridges inserted.

Library Time:

This field displays the current library date and time from the internal system clock used for time stamping events, the library time may be sent by the administrator under the “CONFIGURE/Date & Time” tab.

Fan Speed:

This field displays at which of 4 speeds the fan is currently running.

Fan Status:

This field displays the running fan status (Fan OK/Fan Error). The fan status will be set to fan error if the fan is detected has not running; not running at the proper speed for selected level; or if over temperature condition is sensed.

Power Supply Status:

This field displays the running power supply status (Power Good/Power Error) - The power status will be set to power error if any of the monitored voltages fall below or exceed normal operating parameters.

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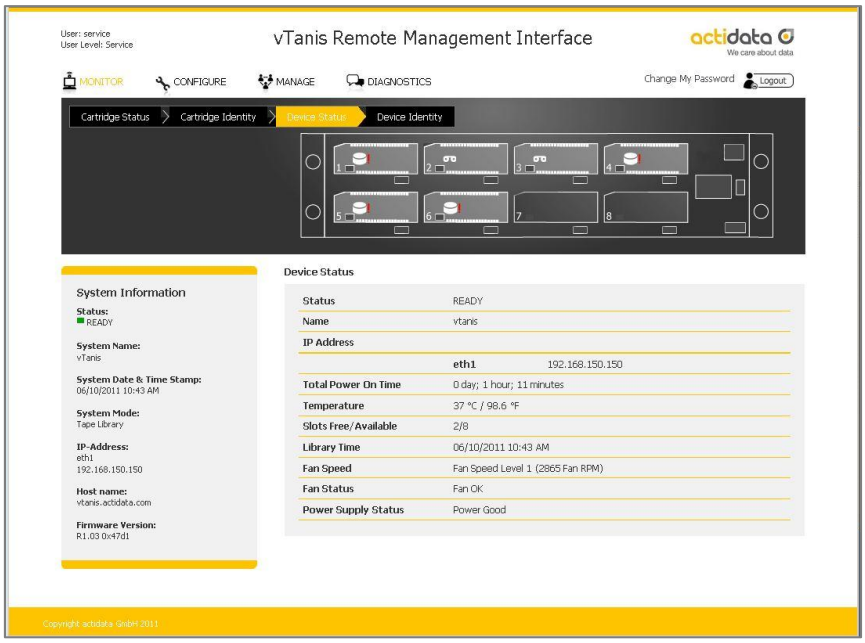

Figure 29 RMI monitor device status

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Device Identity Screen

Vendor ID:

This field shows the manufacturer of the vTanis device.

Product ID:

This field shows the product name.

Serial Number:

This field shows the master serial number of the unit.

Firmware Version:

This field shows the current firmware revision level and firmware check sum of the unit.

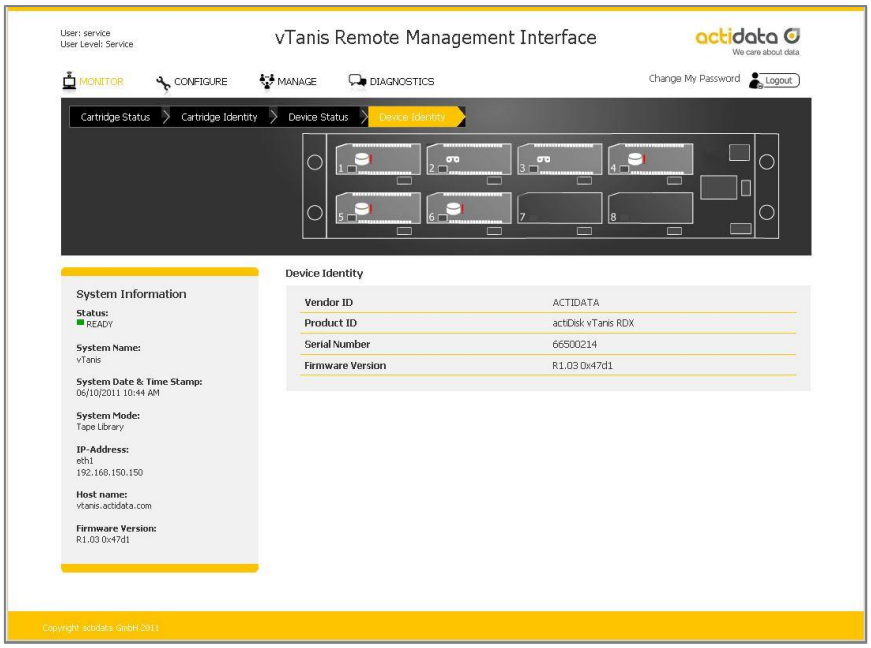

Figure 30 RMI monitor device identity

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Access to the manage functions is granted to administrator and service level account logins. Following are the levels of the “MANAGE” tab.

Managing the library

The “MANAGE/Library” function is only available when the operation mode of the vTanis unit is set to
“Tape Library”. This feature allows the user to “manually move” tape format RDX® cartridges from any storage slot to the drive element. The drive element allows the cartridge to be visible to the host as an emulated LTO tape within an emulated LTO tape drive and for the host to write or read data from the cartridge with applications designed to support LTO tape drives.

To move the cartridge the user highlights the cartridge on the storage slot side (left side of the screen) via a selection point and click with the mouse which highlights the selection, then selects the right pointing arrow (load drive) operator in the center of the page to move the cartridge to the drive. The cartridge will now become visible to the software application as being inserted inside the virtual tape drive. Media access commands may now be executed (Write/read/rewind/etc.) to the cartridge.

The cartridge may be unloaded from the virtual drive by selecting the left pointing arrow (unload drive) operator in the center. Also, selecting any other cartridge from the storage slot side and choosing the load button will result in the automatic unload of the cartridge in the drive. The vTanis will only store cartridges back into their original storage slot location (it is not possible to ‘move” cartridges to a different storage slot.

Also the “MANAGE/Library” function will only allow movement of properly formatted (tape format) cartridges into the virtual drive. Cartridge format is indicated by the icon in the image for each storage slot location. Disk formatted cartridges will appear with the exception mark (red exclamation mark) to indicate an abnormal condition.

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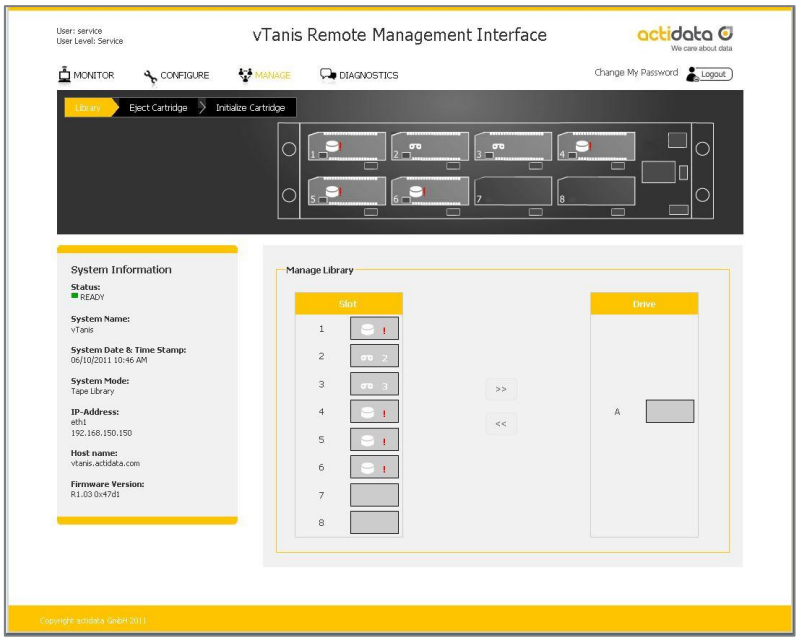

Figure 31 RMI manage library

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Ejecting cartridges

Cartridges may be ejected by selecting the appropriate cartridge slot from the drop down menu and clicking the eject button. Please note if the vTanis system is connected via iSCSI it will not be possible to eject cartridges via the RMI eject function, please eject the cartridge directly from the software application or via the eject function in windows.

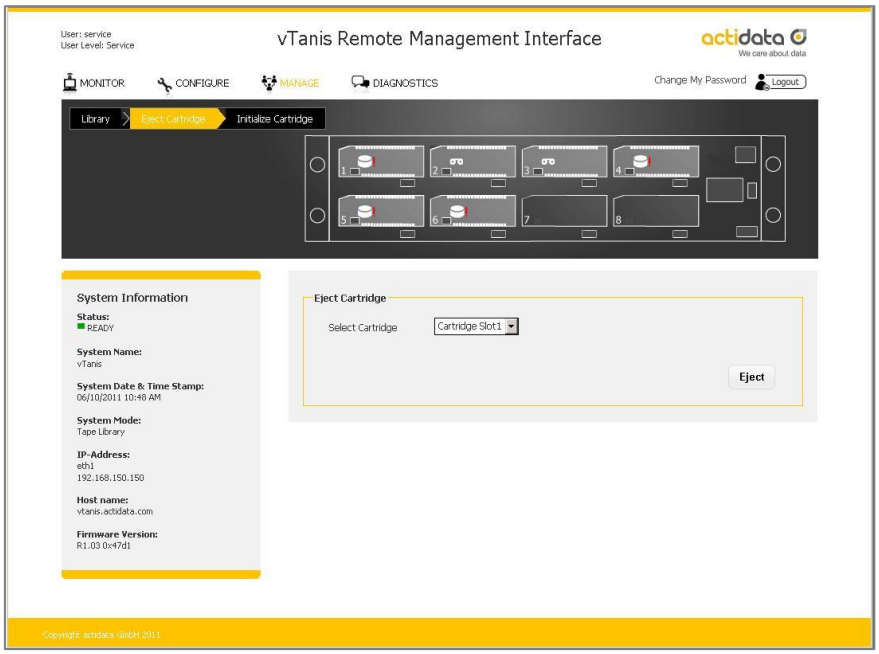

Figure 32 RMI eject cartridge

Initializing cartridges

The vTanis uses a specially format on the RDX® cartridges to support emulation of tape. In order to apply this special format the administrator performs a “pre-format” operation via the initialize cartridge function. This cartridge formatting operation is only necessary to perform once and it is suggested the administrator prepare all cartridges which will be used in the media pool at one time.

Preformatting is only required if the system will be used in tape library mode, it is not necessary to format
RDX® cartridges if the system will be used as JBOD or disk changer mode.

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Converting the RDX® cartridge into tape format mode or reformatting from tape format back to disk format mode destroys any previously written user data on the cartridge (the RDX® cartridge will contain no user data - be blank).

For detailed information see:

Pre-formatting RDX® cartridges to tape library mode, Page 50

Re-formatting tape format RDX® cartridges back to standard RDX® disk, Page 51

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Device Logs

The vTanis unit supports a built in event logging feature designed to facilitate monitoring and trouble shooting of the device. The logs are available for viewing under the “DIAGNOSTICS/Device Logs” tab. Within the “Device Logs” tab the user has the option of filtering the log view as follows;

Errors:

Errors are critical events that indicate either a failure in hardware or a major software issue. If an error is logged the vTanis unit is either non-functional or seriously degraded. Any reported errors need investigation and resolution on a high priority basis.

Warning:

Warnings are events related to potential use problems or command failures. Warnings typically relate to either miss configuration of the vTanis device/cartridge format or attempts to perform operations which are logically/physically prevented within the current device state.

Configuration:

Configuration log messages deal with system mode changes such as operation mode settings.

Info:

Info events log normal events indicating unit status changes which are part of normal operations. For instance insertion and removal of RDX® media form each slot is monitored and logged with info events.

Clear Logs:

The device logs tab has a button to clear the logs in the display view as well as the ability to save logs to a file which may be sent to vTanis support personal for further analysis.

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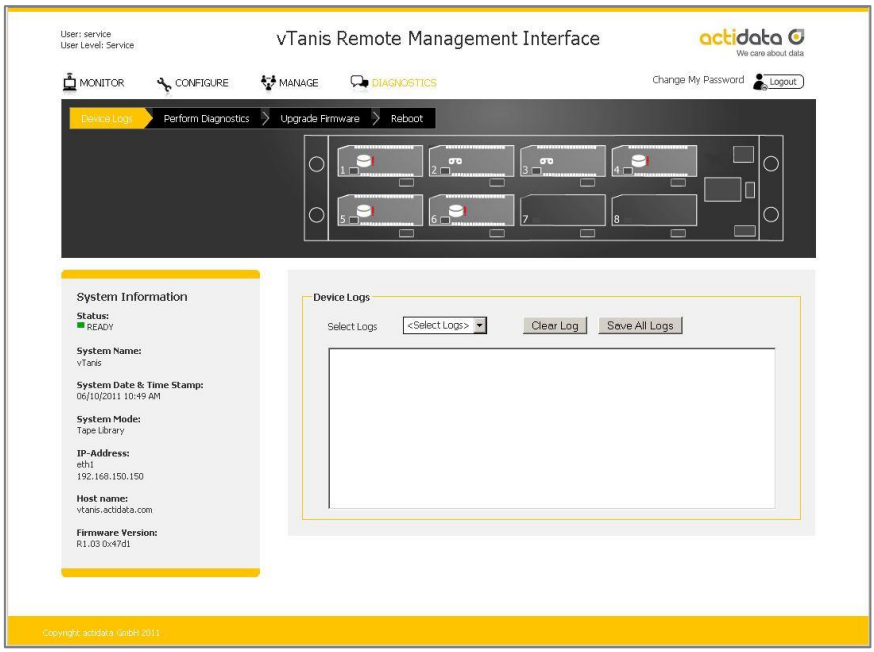

Figure 33 RMI device logs

Save All Logs:

The “Save all Logs” button provides the capability to save the logs to a user selected location. The file is designed to be used by vTanis support personal to aid in problem diagnosis.

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Administrator/Service run diagnostics

The vTanis unit supports a number of interactive diagnostic tests designed to check specific areas of operation of the device. The tests are all designed to be executed locally so the unit's behavior can be observed. The tests are as follows:

Slot UI Test:

It tests each slot for eject button indication and sensing- requires a local operator to interact with the unit.

Display Test:

It tests the LCD display and backlight operation- requires a local operator to step the display with the OCP navigation button and observe the display through various states to confirm operation.

Fan Test:

It tests the operation of the vTanis cooling fan, steps the fan speed through four RPM ranges while monitoring fan rpm.

Cartridge Access Test:

It tests the operation of each slot location by checking communication with a test cartridge. Execution of this test will force the unit offline and eject all inserted cartridges (this is a data safety feature to insure the test operator can use a scratch cartridge) from the unit- requires a local operator to interact with the unit.

To start the diagnostic test sequence select each test by checking each test from the list that you would like to perform and push the "Start Diagnostic" button. You may select to run only one test or all four, upon completion of the selected test(s) a new diagnostic log status page will be created capturing the current test status

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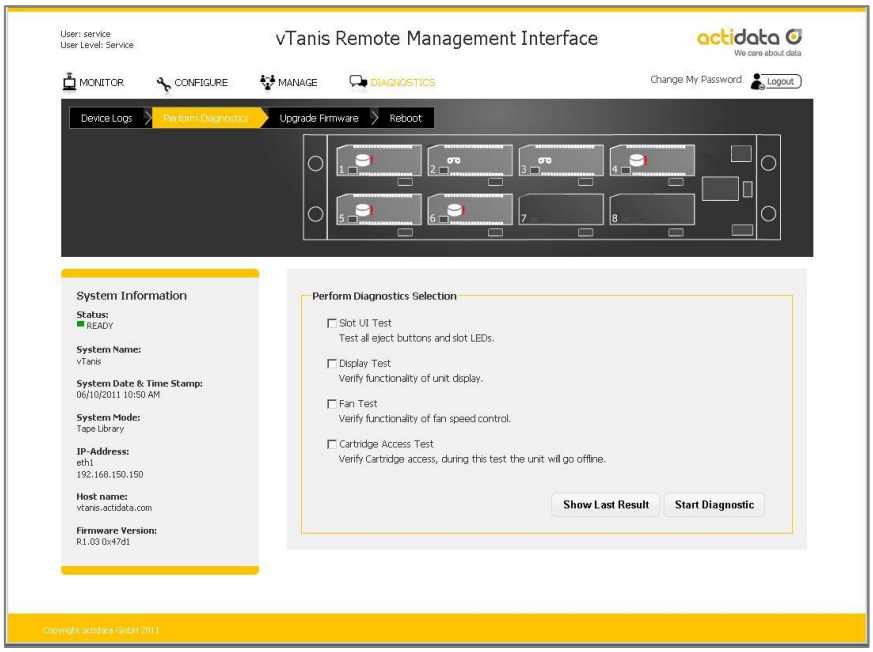

Figure 34 RMI perform diagnostics

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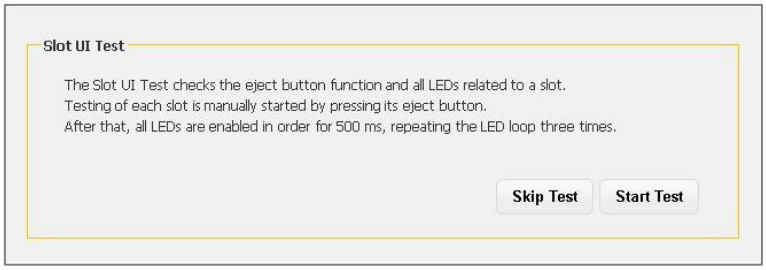
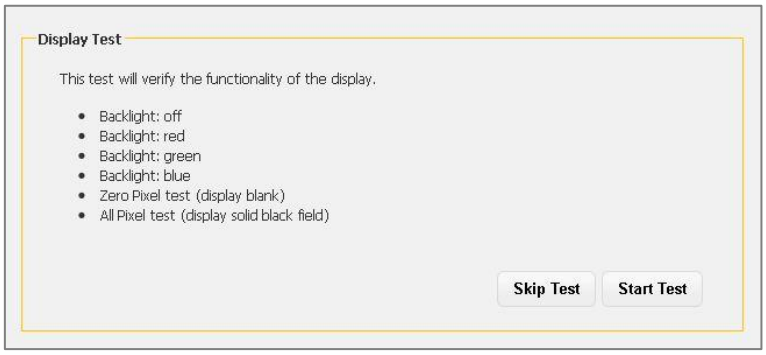
Slot UI Test


Slot UI Test
The Slot UI Test checks the eject button function and all LEDs related to a slot.
Testing of each slot is manually started by pressing its eject button.
After that, all LEDs are enabled in order for 500 ms, repeating the LED loop three times.
Skip Test
Start Test

To execute the “Slot UI Test” select the “Start Test” button which will request the operator to push each individual slot eject button and observe the LED behavior, it will blink three times green then three times amber. Note that when the vTanis is in the slot UI test mode any inserted cartridge will not be ejected by the associated button push during the test. Once all eight positions have been verified confirm completion of a successful test by selecting “Test Passed” button which will create a “Slot UI Test passed” status.

Display Test



To execute the “Display Test” select the “Start Test” button. The local operator will then be asked to push the OCP navigation button and observe the display. Each navigation button push will step the unit through a different display action. The first four steps will change the display backlight from white, to red, to green, to blue verifying proper operation of the RGB backlight. The next two steps will first clear all display pixels (the observer should see no dots) then set all pixels black (the observer should see no missing black dots in the field).

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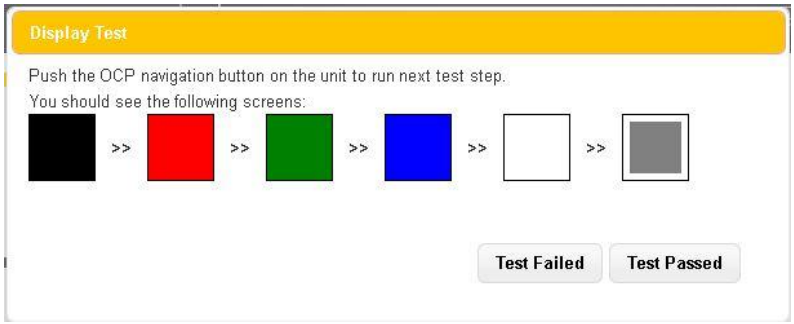

Once all six display conditions have been verified confirm completion of a successful test by selecting “Test Passed” button which will create a “Display Test passed” status.

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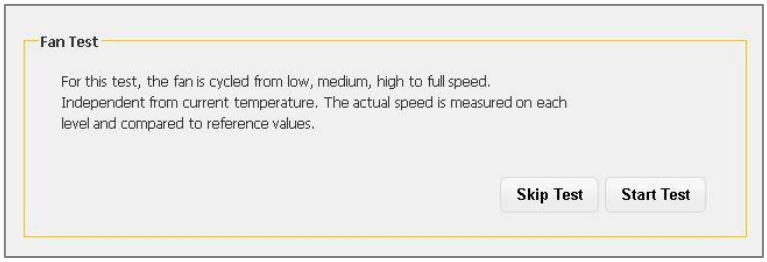
Fan Test


Fan Test
For this test, the fan is cycled from low, medium, high to full speed.
Independent from current temperature. The actual speed is measured on each
level and compared to reference values.
Skip Test
Start Test

To execute the “Fan Test” select the “Start Test” button. The fan will cycle through four operation speeds while monitoring the fan RPM for the correct reference value.

Once the fan test has completed the vTanis will report a pass/fail status and the administrator may click the “OK” button to log the result.

Cartridge Access Test

The “Cartridge Access Test” checks the ability of each slot to properly insert/load, identify/communicate with RDX® media, and unload/eject RDX® media. The unit will be taken offline from the iSCSI connection to prevent concurrent data access attempts from the host system. Also at the start of the test all currently inserted RDX® media will be bulk ejected from the unit. It is suggested the test operator use a known good cartridge which can be used to test each slot.

To execute the “Cartridge Access Test” select the “Start Test” button, the vTanis unit will then bulk eject all currently inserted cartridges and ask the user to remove them from the unit.

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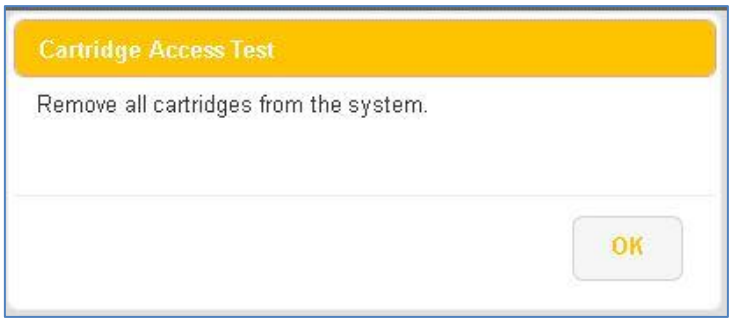
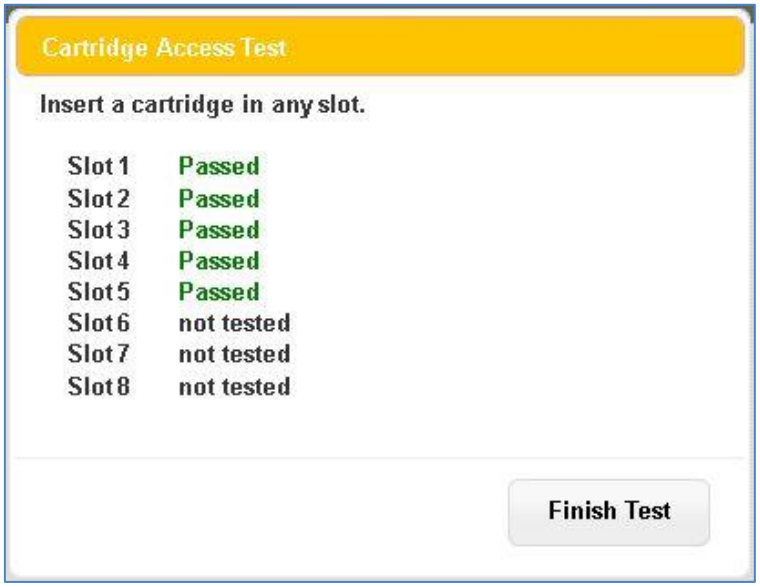


The operator will then be asked to insert a cartridge in each of the eight slots in sequence. The vTanis unit will then perform the slot access test and eject the cartridge and provide a pass/fall status.



Upon completion of testing of all eight locations the operator can confirm “OK” which will log the results to the diagnostic test log. The operator will be instructed to place the user data cartridges back into the unit, and the unit will reconnect to the iSCSI network.

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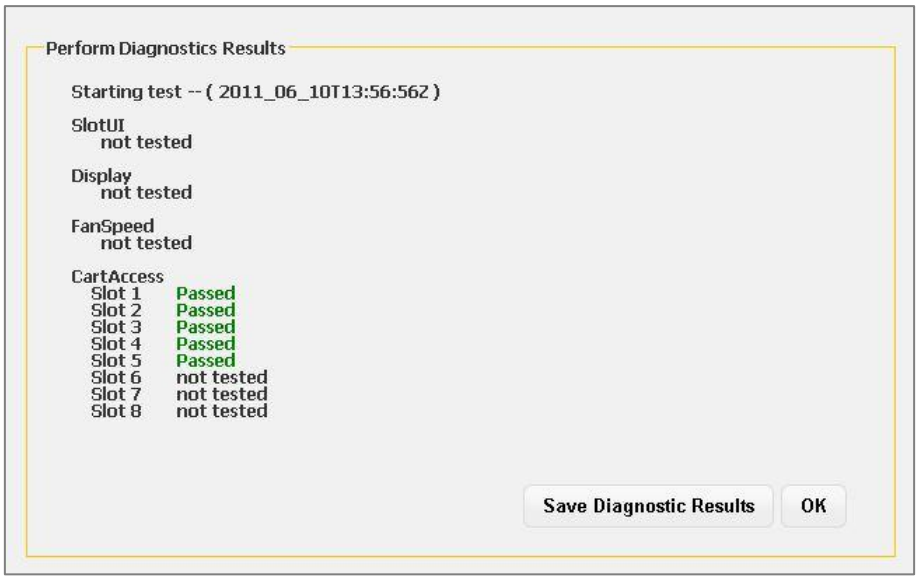

Figure 35 RMI diagnostics passed

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Upgrade Firmware

The vTanis “DIAGNOSTICS” menu also supports the ability to upgrade the unit operating firmware via the “DIAGNOSTICS/Upgrade Firmware” tab. To upgrade the firmware the user must have a valid vTanis firmware upgrade image available on the RMI host computer. Released firmware images are available via the vTanis support team. vTanis firmware images have an “.fbi” file extension and are approximately ~22MB in size.

To upgrade the firmware select the “Upgrade Firmware” tab and you the “Browse” button to set a path to the vTanis firmware file located on the computer system connect via RMI, and then select the “Upgrade” button. The unit will proceed with the upgrade and reboot after the new code is installed. It will be necessary to log back into the RMI to regain access to the management interface.

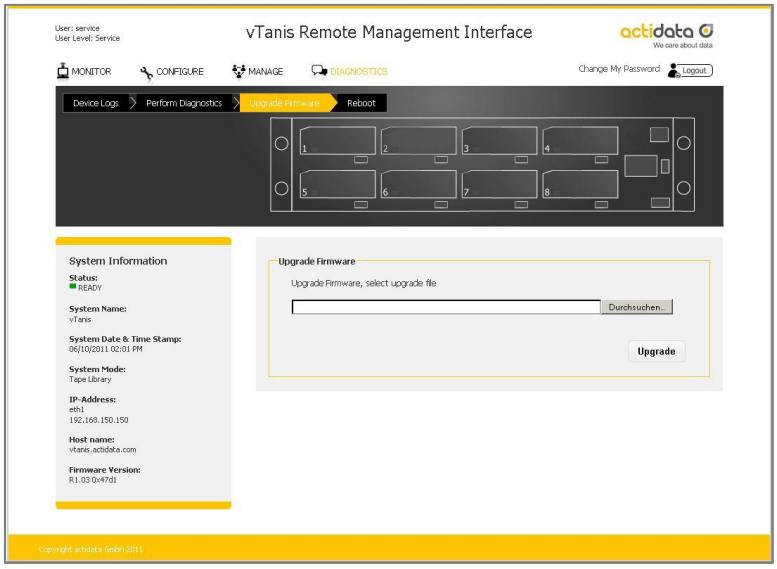

Figure 36 RMI upgrade firmware

Reboot considerations

The vTanis may be rebooted remotely via the “DIAGNOSICS/Reboot” tab selecting the “Reboot” tab and activating the “Reboot” button in the RMI. Rebooting the unit takes approximately 2 minutes and will require the administrator to log in to the RMI again after the reboot process is complete.

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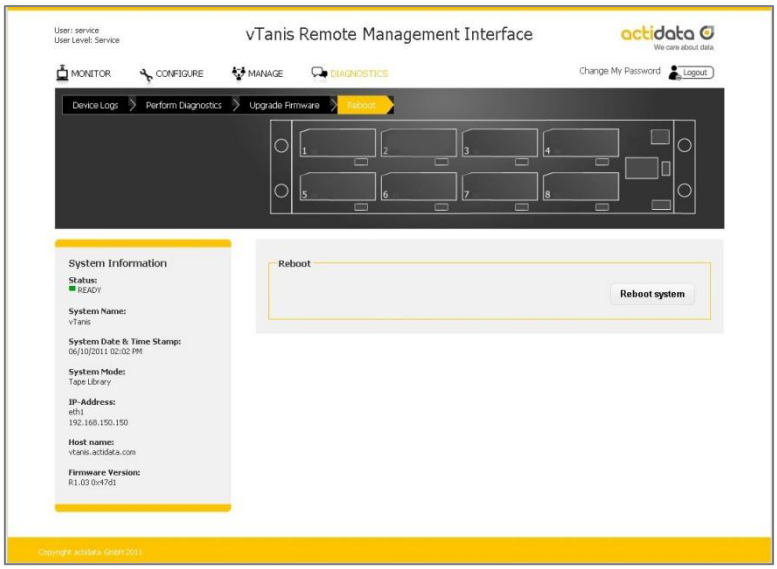

Figure 37 RMI reboot system

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RDX® cartridges

This chapter describes the use of the RDX® cartridge in the vTanis. The RDX® cartridge utilizes a removable 2.5” mobile HDD to offer the reliability and performance of disk technology along with the manageability of removable media.

For physical and functional specifications, please see chapter **Product specification, Page 96.**

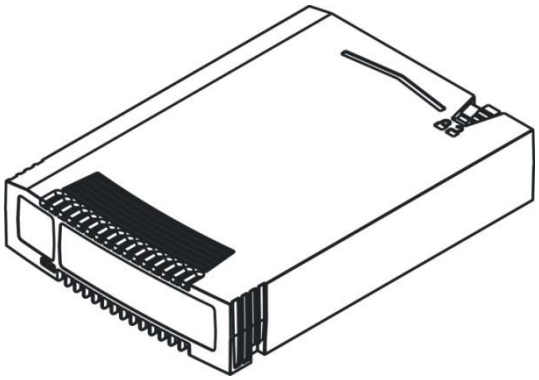

Figure 38 Cartridge overview

RDX® cartridges contain HDDs with SATA I or SATA II interfaces capable of transferring data at either 1,5 GB/s or 3,0 GB/s.

Write-protecting cartridges

The write protect slider is located on the top right rear of the cartridge. With the slider and in the right most position, the cartridge is shown to be writable (un-locked) and in the left most position the cartridge is shown to be write-protected (locked).

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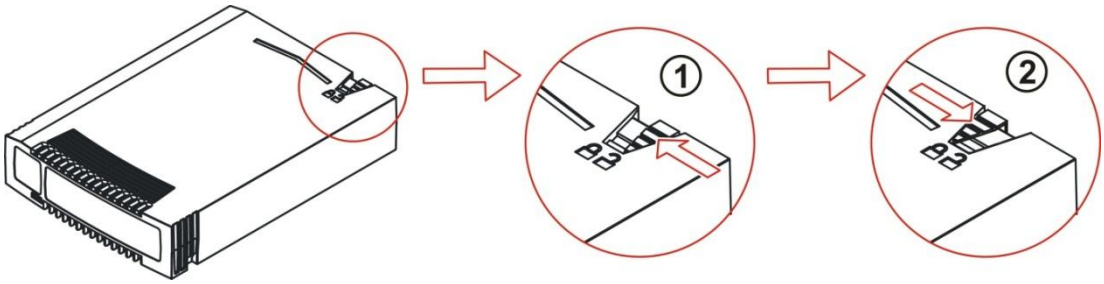

Figure 39 Write-protecting cartridges

Number	Description
1	Cartridge is writable.
2	Cartridge is write-protected.

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Inserting cartridges

1. Find an empty RDX® cartridge slot (8 places) in the unit to be inserted.
2. Push the RDX® cartridge gently into the cartridge slot until it seats itself against the back of the unit.
3. Verify that the cartridge is properly inserted. When the cartridge indicator LED is steady green the cartridge is ready.

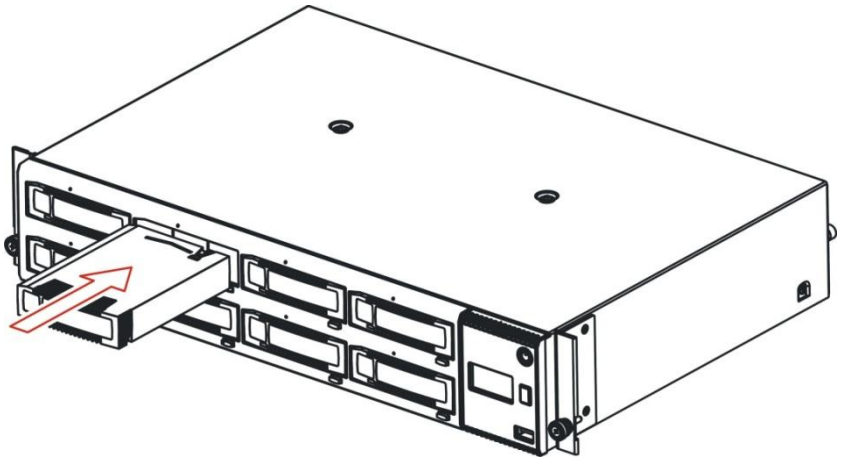

Figure 40 Inserting cartridges

Ejecting cartridges

The vTanis unit has three possibilities to eject cartridges:

1. Ejecting individual cartridges with the front panel cartridge eject button (when allowed by application) or when the unit is offline (not connected to an iSCSI host).
2. Ejecting cartridges through the vTanis RMI interface
see chapter

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3. **Ejecting** cartridges**, Page 79.**

4. Manually ejecting cartridges with the emergency eject port when the unit power is off or in error conditions.

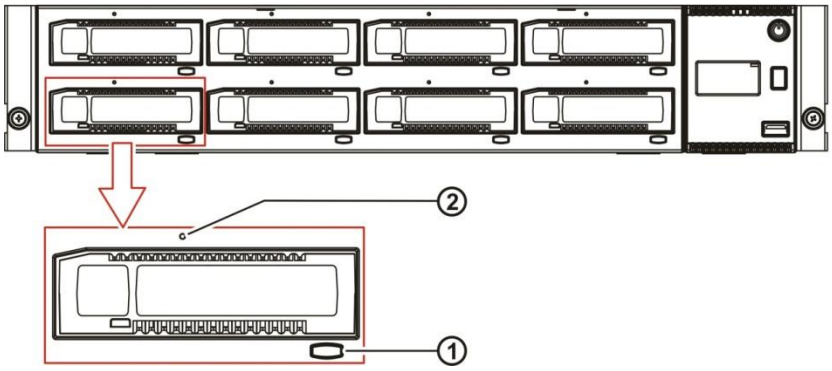

Figure 41 Ejecting cartridges

Press the cartridge eject button ① to eject the cartridge. If the cartridge does not eject, use the following emergency methods to recover the cartridge:

1. Power down the vTanis.

2. Insert a straightened paper clip into the emergency eject port until resistance is felt indicating the paper clip is contacting the emergency eject rod, provide a firm push in ② to eject the cartridge.

When using the emergency eject feature the force should be applied to the paper clip in a straight line (paper clip held square (90 degrees) in both the horizontal and vertical planes) pushing in toward the front bezel. Avoid applying force to the emergency eject port in any other direction or damage may occur.

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Appendix

Product specification

Physical specification & Functional specification

Mechanical dimension and unit height

1. Unit Height: 2U with clearance for units above and below
2. Unit Depth: Less than 12" (excluding connectors)
3. Unit Width: Fits standard 19" computer racks
4. Standalone Unit Weight, (without a disk): 6,0 kg
5. Packaged Unit Weight, (with accessory kit, without disks): 8,0 kg
6. Single Disk Weight (without plastic box): 0.170 kg
7. Single Packaged Disk Weight (with plastic box): 0.240 kg

Operating Temperature: +10° – +35° C

Operating Temperature Gradient: 10°C/hour

Storage Temperature: - 30° – +60° C

Non-operating Temperature Gradient: 20° C/hour

Relative Humidity Operating: 20 – 80 % non-condensing

Relative Humidity Non-operating: 20 – 90 % non-condensing

Operating humidity Gradient: 10% r.h./hour

Non-operating Humidity Gradient 10° C/hour

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Altitude Operating:	0 to 10,000 feet (3000 m) at 25° C ambient
Altitude Storage:	-22 – 30,000 feet
Input voltage:	100-240 VAC, 50-60 Hz
Input power, Unit standby:	0,7 W
Input power, Unit ready:	17 W
Input power, Unit read/write 1 Cartridge:	20 W
Input power, Unit read/write 8 Cartridge:	32 W

Power Supply key parameters:

- Wide Range Input Voltage: 90-264 VAC
- Total Output Power: 100W (with fan cooling, 80W with convection cooling
- Output Voltage: 15 VDC
- Efficiency: >85% (Certification 80 PLUS Bronze)
- Input power <1,0 W with 10mA output load
- Hold up time >15 ms
- EMI class A
- MTBF > 250 k hours

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Regulatory Requirements

Product Safety:

- CB Report and Certification with all national deviations, according:
- IEC 60950-1:2005
- EN 60950-1:2006 + A11:2009
- UL 60950-1 Issued 2007/03/27 Ed. 2
- CSA-C22.2 No. 60950 Issued 2007/03/01 Ed. 2

Emission:

- IEC CISPR 22:2008-09 Ed. 6.0 Limit: Class A
- EN 55022:2006 + A1:2007 Limit: Class A
- FCC: 47CFR Part 15B:2008-07 Limit: Class A (Test acc. to CISPR 22)
- ICES-003, Issue 4 2004-03 Limit: Class A (Test acc. to CISPR 22)
- AS/NZS 3548:1995 + A1/A2:1997 Limit: Class A
- VCCI V-3 2009-04 in parts (Japan) Limit: Class A
- VCCI V-4 2009-04 in parts (Japan) Limit: Class A
- EN 61000-3-2:2006
- EN 61000-3-3:1995 + A1:2001 + A2:2005

Immunity:

- EN 55024:1998 + A1:2001 + A2:2003

(Requires tests according to the actual versions of:

o IEC 61000-4-2

o IEC 61000-4-3

o IEC 61000-4-4

o IEC 61000-4-5

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- IEC 61000-4-6
- IEC 61000-4-8
- IEC 61000-4-11 (Limits acc. to EN 55024:1998))

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CRU replacement

Power supply

The power supply is a CRU (Customer Replaceable Unit). The power supply is located on the rear side of the unit and is fixed with two thumb screws. The power supply is capable to power up to 8 cartridges simultaneously while supporting other unit electronics (controller, LED`s, OCP, motors).

For technical specification, see chapter **Product specification, Page 96**.

Removing a power supply

1. Power down the unit by pressing the power button on the front panel.
2. Locate the power supply on left side on the rear panel of the vTanis unit, shown in chapter **Rear panel layout, Page 18**.
3. Remove the power cord on the rear panel of the unit.
4. Loosen the two thumbscrews located on the rear of the power supply using a #3 Phillips screwdriver or your fingers.
5. Pull the power supply straight out of the unit.
6. To store or ship the removed power supply, repackage it in the original or replacement device packaging materials.

Installing a power supply

1. Locate the power supply bay on left side on the rear panel of the vTanis unit, shown in chapter **Rear panel layout, Page 18**.
2. Before installing the power supply, inspect the connectors on the power supply. Ensure that the connectors are intact, free of any foreign objects, and have no cracks or deformed or bent contacts.
3. Insert the power supply on the alignment rails and push the power supply into the power supply bay until it seats itself against the back of the unit, see **Figure 42**.

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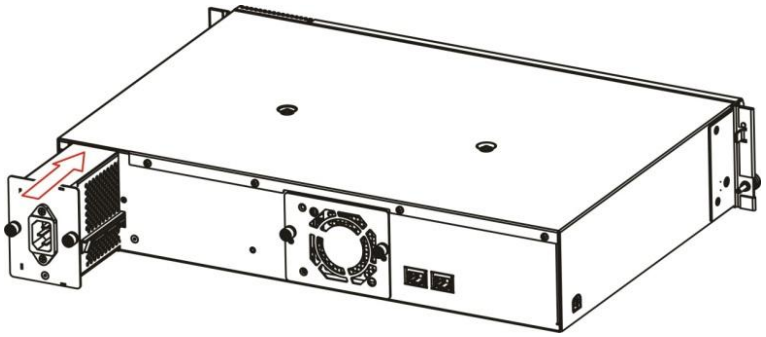

Figure 42 Installing a power supply

4. Tighten the two thumbscrews using a #3 Phillips screwdriver or your fingers to secure the power supply to the unit.

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Cooling fan

The cooling fan is a CRU (Customer Replaceable Unit)). The fan is located on the rear side of the unit and is fixed with 2 thumb screws. The fan is speed controlled. The speed varies in 4 steps (low, medium, high and max) and is controlled by a micro controller and thermal sensors.

For technical specification, see chapter **Product specification, Page 96.**

Removing a cooling fan

1. Power down the unit by pressing the power button on the front panel.
2. Locate the cooling fan on the middle of the rear panel of the unit, shown in chapter **Rear panel layout, Page 18**.
3. Remove the power cord on the rear panel of the unit.
4. Loosen the two thumbscrews located on the rear of the cooling fan using a #3 Phillips screwdriver or your fingers.
5. Pull the cooling fan straight out from the rear of the unit.
6. To store or ship the removed cooling fan, repackage it in the original or replacement device packaging materials.

Installing a cooling fan

1. Locate the cooling fan bay on the middle of the rear panel of the vTanis unit, shown in chapter **Rear panel layout, Page 18**.
2. Before installing the cooling fan, inspect the connectors on the cooling fan CRU and the mating connector in the vTanis unit. Ensure that the connectors are intact, free of any foreign objects, and have no cracks or deformed or bent contacts.
3. Push the cooling fan straight into the cooling fan bay until it seats itself against the back of the unit, see **Figure 43.**

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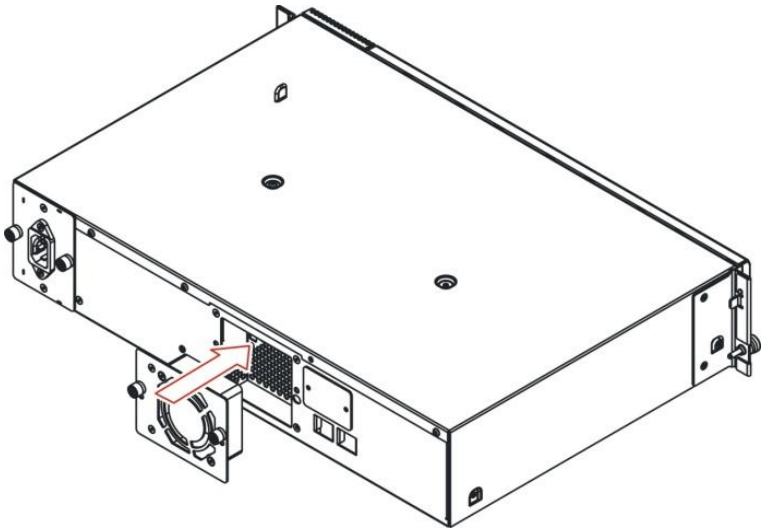

Figure 43 Installing a cooling fan

4. Tighten the two thumbscrews using a #3 Phillips screwdriver or your fingers to secure the cooling fan to the unit.

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Removing the base chassis

To prepare the base chassis removal, adhere strictly the following steps:

1. If the OCP or RMI works:
   - Write down the system, cartridge and network configuration settings.
     You will need these settings to re-configure the vTanis unit after replacing the base chassis.
   - Remove all cartridges; see chapter **Ejecting cartridges, Page 94**.
2. If the OCP or RMI does not work:
   - Remove the cartridges manually from the unit; see chapter **Ejecting cartridges, Page 94**.
3. Power down the vTanis by pressing the power button on the front panel.
4. Remove the cables on the rear panel of the unit.
5. Remove the power supply; see chapter **Removing a power supply, Page 100**.
6. Remove the cooling fan; see chapter **Removing a cooling fan, Page 102**.

To remove the base chassis from the rack, adhere strictly the following steps:

1. Using a #3 Phillips screwdriver or your fingers to loosen the two captive thumb screws on each side of the unit.
2. Remove the unit from the rack rails.
3. Remove the rack ears of the unit using T10 Torx screwdrivers to loosen the torx screws on each side of the unit.
4. To store or ship the removed base chassis, repackage it careful in the original packaging materials,
   see chapter **Packaging, Page 106**.

Replacing the base chassis

Use this procedure to replace the base chassis with another base chassis:

1. To remove the base chassis from the rack, see chapter **Removing the base chassis, Page 104**.

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2. To install the new base chassis and its components, see

   vTanis; see chapter **Product installation, Page 21**.

   Power supply; see chapter **Installing a power supply, Page 100**.

   Cooling fan; see chapter **Installing a cooling fan, Page 102**.

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Packaging

- vTanis Device without cartridges
- Power Cable US, UK, GE
- Rack mount Kit
- Screws for rack mount kit
- Network Cable

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Glossary

CRU	**Customer Replaceable Unit** is easily replaceable module designed to enable customer serviceability of the vTanis unit. CRU's can be exchanged by the end use customer without tools to support field renew/repair of either the cooling fan or power supply system.
DHCP	The **Dynamic Host Configuration Protocol** is an automatic configuration protocol used on IP networks. Computers that are connected to IP networks must be configured before they can communicate with other computers on the network. DHCP allows a computer to be configured automatically.
DNS	The **Domain Name System** is a hierarchical naming system built on a distributed database for computers, services, or any resource connected to the Internet or a private network. Most importantly, it translates domain names meaningful to humans into the numerical identifiers associated with networking equipment for the purpose of locating and addressing these devices worldwide.
Disk	Refers either to a HDD unit or the direct block addressing scheme used to store and retrieve digital data on the HDD. When the vTanis unit is in disk mode direct block addressing is used to access the contained RDX® media.
ESD	**Electro Static Discharge** is the sudden and momentary electric current that flows between two objects at different electrical potentials The term is usually used in the electronics and other industries to describe momentary unwanted currents that may cause damage to electronic equipment.
HDD	**Hard Disk Drive** refers to the core storage device using rotating magnetic media to store digital information. RDX® cartridges make use of embedded HDD's to store data.
iSCSI	**Internet Small Computer System Interface**, an Internet Protocol (IP)-based storage networking standard for linking data storage facilities. By carrying SCSI commands over IP networks.
iSNS	**Internet Storage Name Service,** protocol that allows automated discovery, management and configuration of iSCSI devices on a TCP/IP network.
LED	**Light Emitting Diode** is a semiconductor light source. The vTanis uses LED's to provide power switch, eject button, and cartridge status indication. LED technology is also used to provide the backlighting for the LCD display used in the OCP.

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MTU	In computer networking, the **Maximum Transmission Unit** of a communications protocol of a layer is the size (in bytes) of the largest protocol data unit that the layer can pass onwards. MTU parameters usually appear in association with a communications interface (NIC, serial port, etc.).
OCP	**Operator Control Panel** includes display, buttons and LED's and enables the user to operate the unit from the front
RDX	Is a removable disk technology developed by ProStor.
RMI	**Remote Management Interface** provides the capability to operate the unit through a web based remote management interface
SCSI	**Small Computer System Interface** is a set of standards for physically connecting and transferring data between computers and peripheral devices. The vTanis uses the SCSI protocol transmitted via iSCSI packets over the user's computer network.
SMI-S	SMI-S, or the **Storage Management Initiative Specification**, is a storage standard developed and maintained by the Storage Networking Industry Association (SNIA). It has also been ratified as an ISO standard. SMI-S is based upon the Common Information Model (CIM) and the Web-Based Enterprise Management (WBEM) standards defined by the Distributed Management Task Force (DMTF), which define management functionality via HTTP. The most recent approved version of SMI-S is available at the SNIA.
SNMP	**Simple Network Management Protocol** is an Internet-standard protocol for managing devices on IP networks. Devices that typically support SNMP include routers, switches, servers, workstations, printers, modem racks, and more. It is used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.
USB	**Universal Serial Bus** is an interface designed to provide high speed connection of various device types in a hot pluggable manner. The vTanis system has one USB 2.0 port located on the front panel for various operations (firmware version dependent)

Trademarks:

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